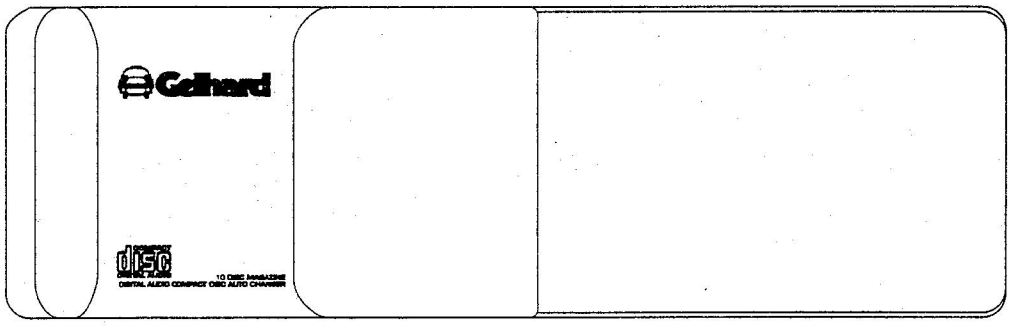
SERVICE MANUAL

GXD 717XP
GXA 1717

Compact Disc-Autochanger System



Gelhard®
Germany

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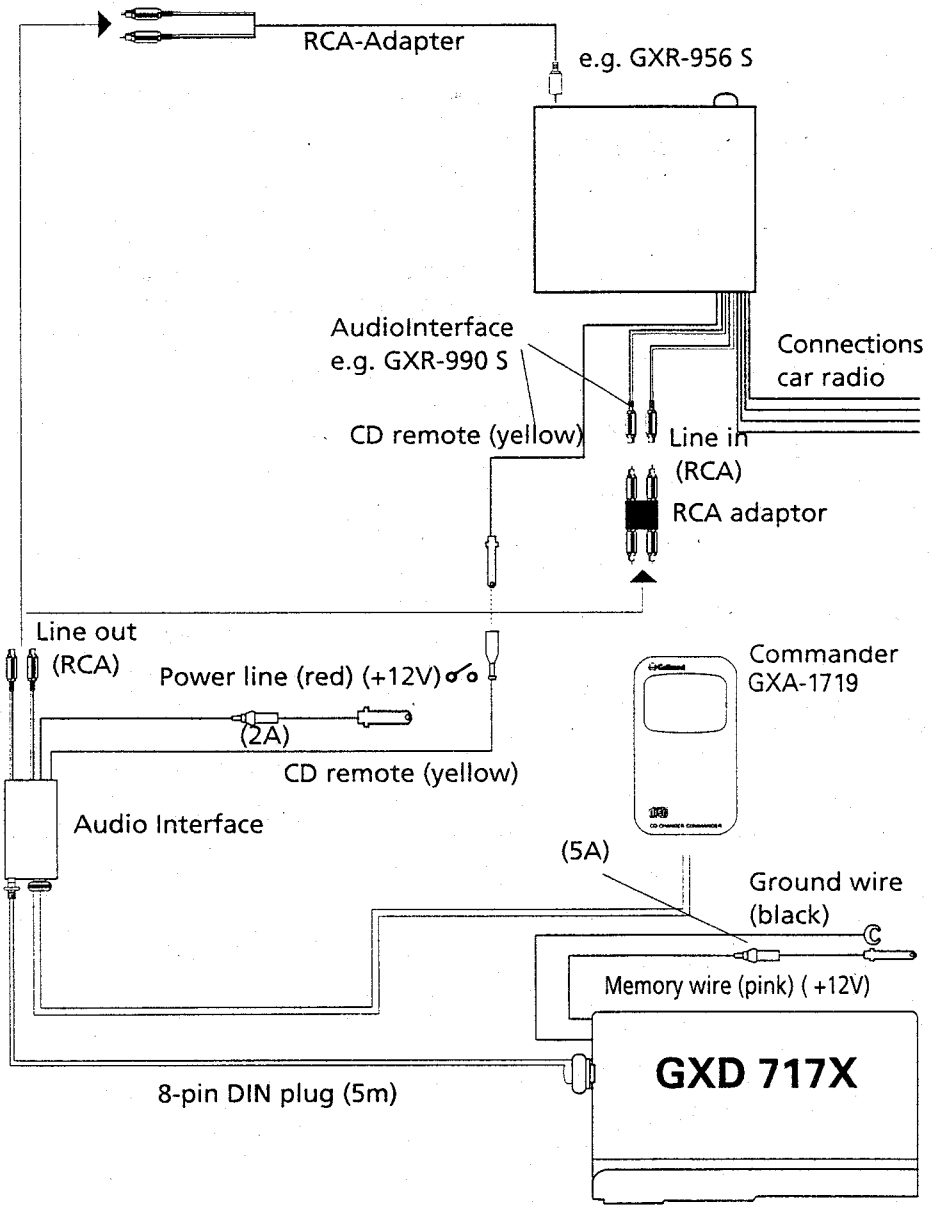
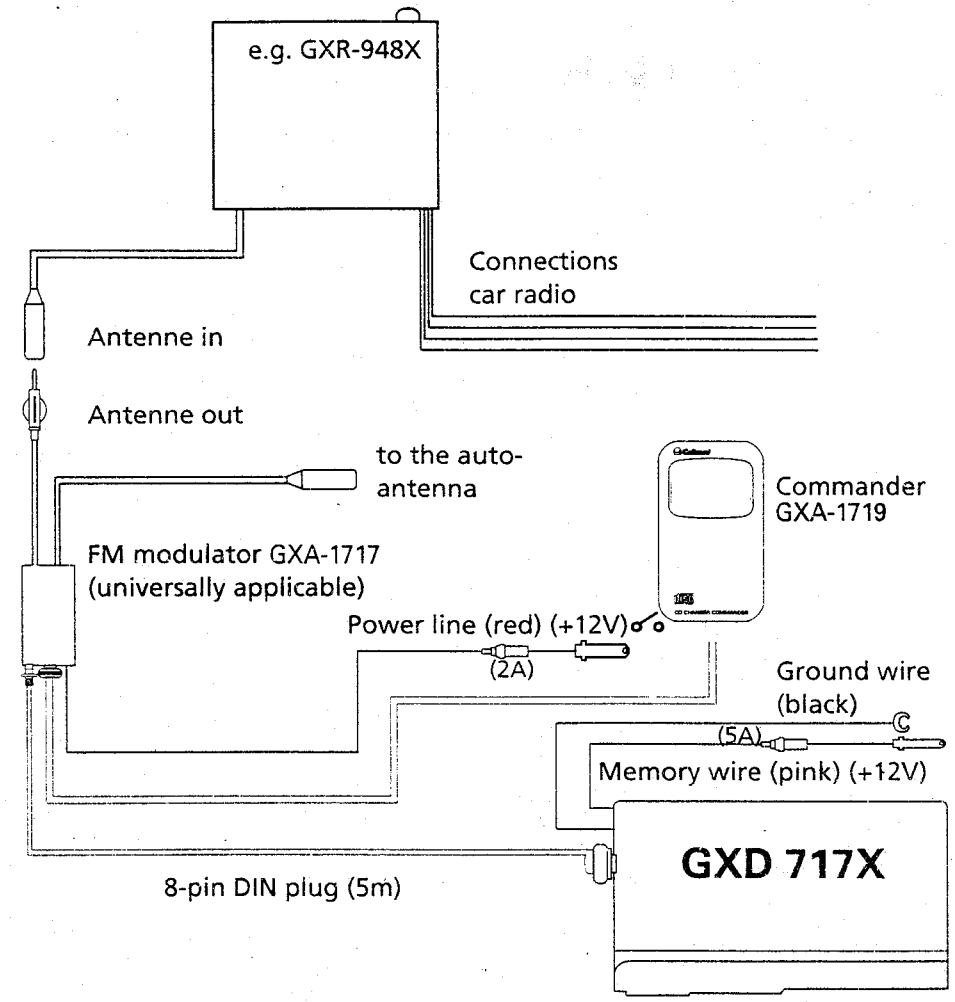
WIRING

Connection with Audio Interface



Connection with FM Modulator



SPECIFICATIONS

General Section

Power supply:	14 Volts
Ground polarity:	Negative (−)

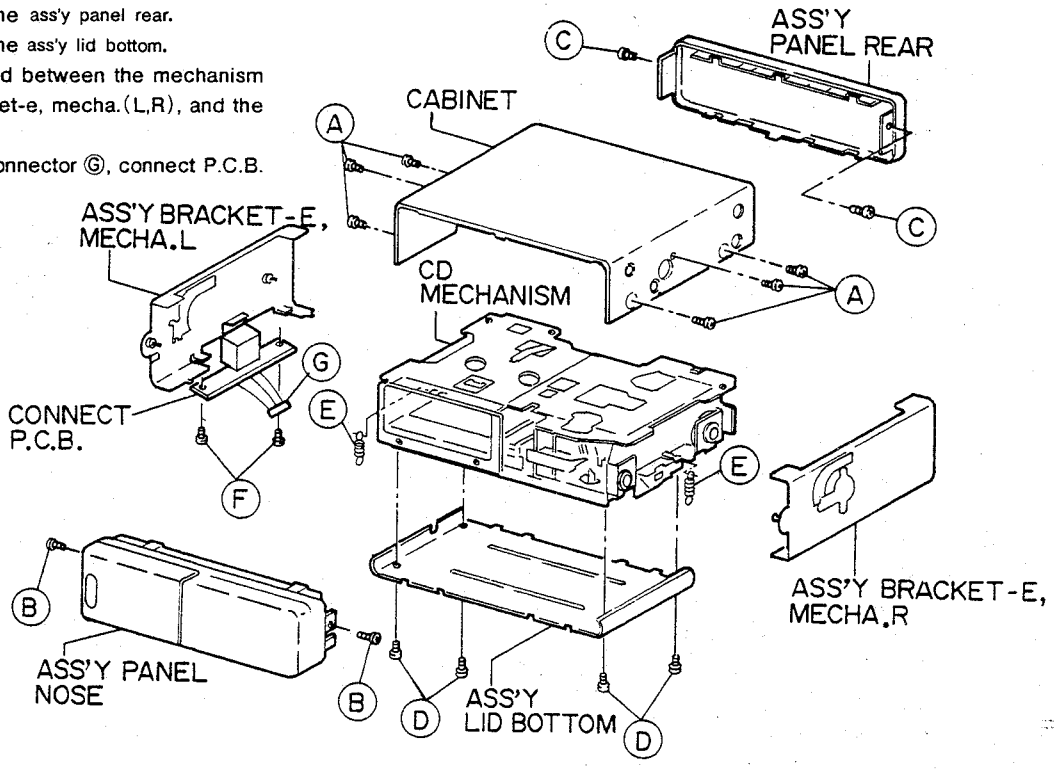
COMPACT DISC Section

	Description	Unit	Nominal	Limit
1	OUTPUT LEVEL	mV	680	$^{+150}_{-100}$
2	Frequency response at 20 Hz at lok kHz at 20 kHz	 dB dB dB	 0 −2.0	 ±3.0 ±3.0 ±4.0
3	T.H.D. (30 kHz LPF) at 1 kHz	%	0.008	0.05
4	Signal to noise ratio (JIS A) at 0 dB 1 kHz	dB	90	80
5	Separation (30 kHz LPF) at 1 kHz	dB	85	70

NOTE: Nominal specs represent the design specs; all units should be able to approximate these—some will exceed and some may drop slightly below these specs. Limit specs represent the absoute worst condition which still might be considered acceptable; in no case should a unit perform to less than within any limit spec.

DISASSEMBLY

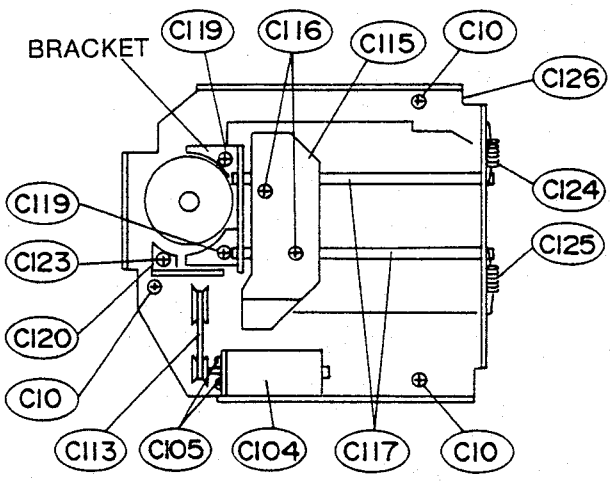
1. Remove 6 screws Ⓐ securing the cabinet.
2. Remove 2 screws Ⓑ securing the ass'y panel nose.
3. Remove 2 screws Ⓒ securing the ass'y panel rear.
4. Remove 4 screws Ⓓ securing the ass'y lid bottom.
5. If remove the spring Ⓔ installed between the mechanism and the chassis, also ass'y bracket-e, mecha.(L,R), and the mechanism can be removed.
6. Remove 2 screws Ⓕ and the connector Ⓖ, connect P.C.B. can be removed.



CD MECHANISM

A. Pick up

① Remove 1 screw (C123) securing the SW metal fitting the Bracket.
② Remove 2 screws (C119) securing the ass'y CD chassis (C126).
③ Remove the springs (C124) (C125) securing the Pick-up rail (C117).
④ Remove 2 screws (C116) securing the Pickup Bracket (C115).
⑤ Detach the Pickup rail (C117), and take out the Pickup.



B. SPINDLE MOTOR

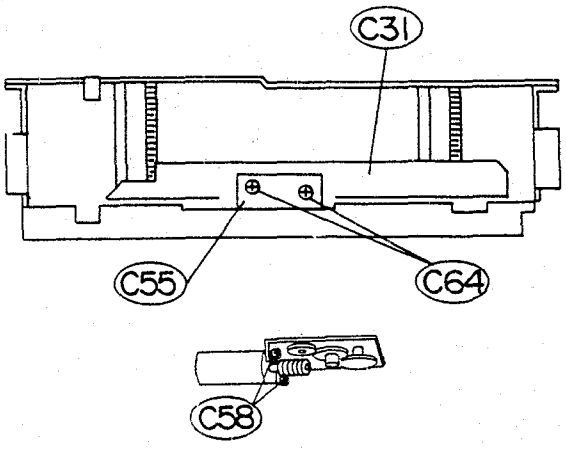
① Replace the SPINDLE MOTOR together with the assy CD chassis (C126).

C. FEED MOTOR

① Remove 3 screws (C10), and detach the assy CD chassis (C126).
② Detach the belt (C113).
③ Remove 2 screws (C105), and take out the FEED MOTOR (C104).

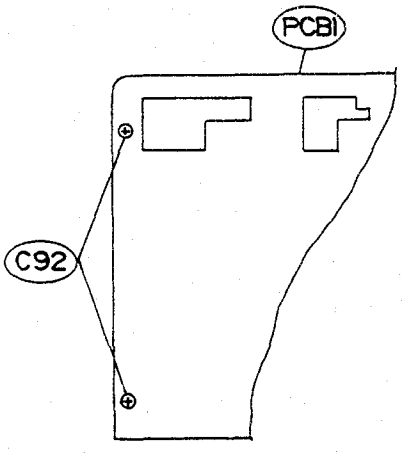
D. LOADING MOTOR

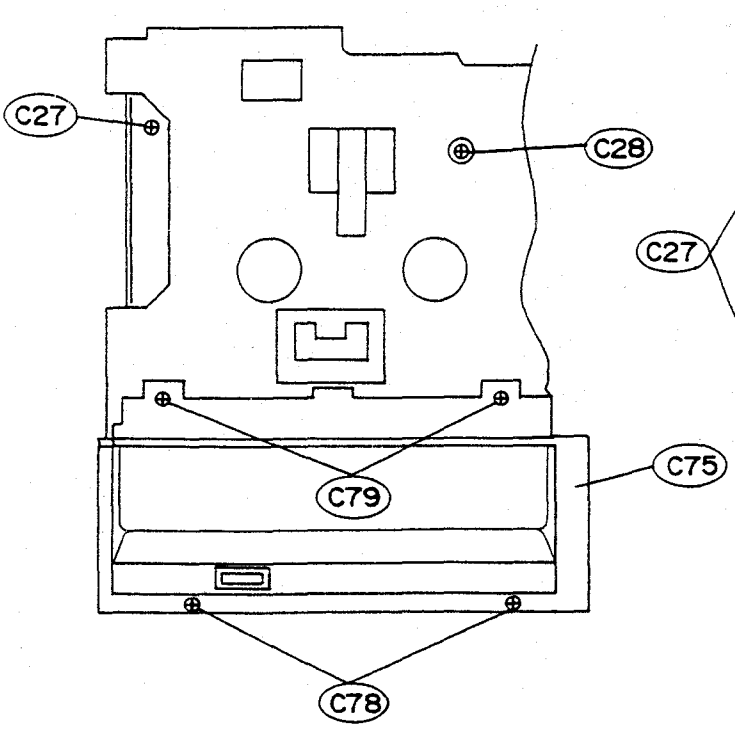
① Remove 2 screws (C64) and take out the LOADING MOTOR Bracket (C55) from the ELEVATOR chassis (C31) attached to the rear of mechanism.
② Remove 2 screws (C58), and take out the LOADING MOTOR.

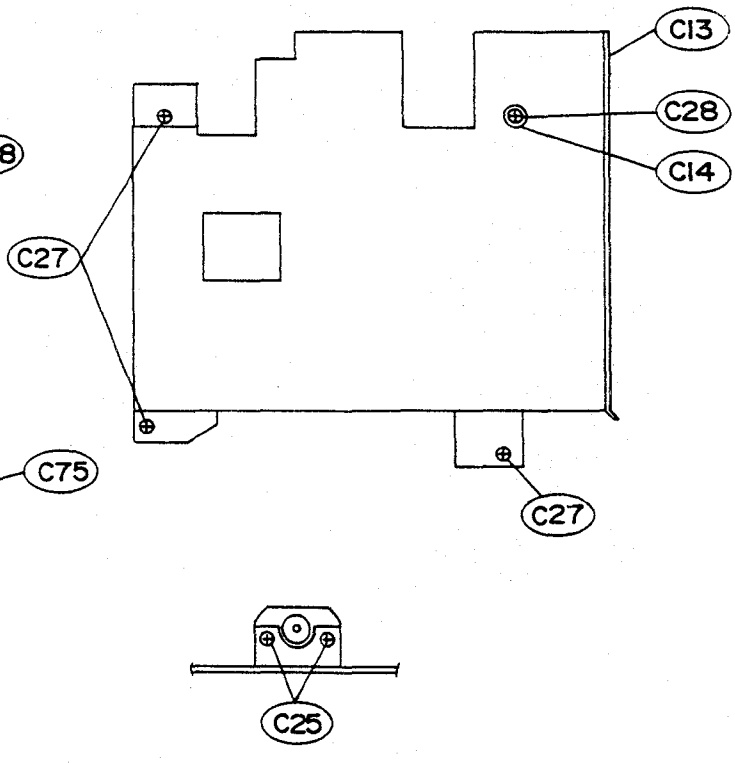


E. ELEVATOR MOTOR

① Remove 2 screws (C92), and detach the main P.C.B. (PCB1). (Detach 9 sockets.)
② Remove 4 screws (C78) (C79) securing the NOSE PANEL (C75).
③ Remove 4 screws (C27) (C28) securing the Magazine chassis (C13), and 1 sleeve (C14).
④ Remove 2 screws (C25), and take out the ELEVATOR MOTOR.
Remove the solder of Motor terminal.







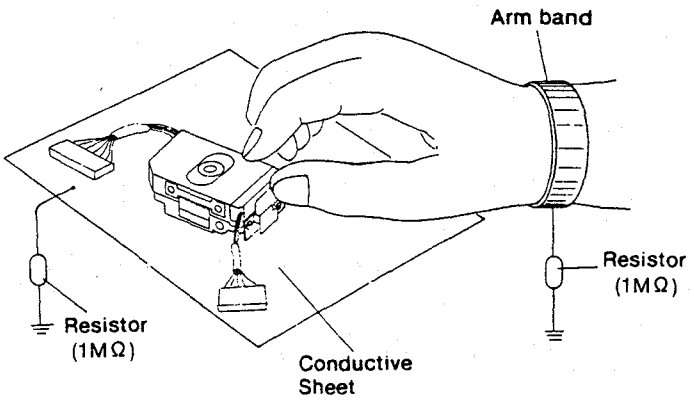
NOTES REGARDING COMPACT DISC PLAYER REPAIRS

(1) Preparations

1) Compact disc players incorporate a great many ICs as well as the pickup (laser diode). These components are sensitive to, and easily affected by, static electricity. If such static electricity is high voltage, components can be damaged, and for that reason components should be handled with care.
2) The pickup is composed of many optical components and other high-precision components. Care must be taken, therefore, to avoid repair or storage where the temperature of humidity is high, where strong magnetism is present, or where there is excessive dust.

(2) Notes for repair

1) Before replacing a component part, first disconnect the power supply lead wire from the unit.
2) All equipment, measuring instruments and tools must be grounded.
3) The workbench should be covered with a conductive sheet and grounded.
   When removing the laser pickup from its conductive bag, do not place the pickup on the bag. (This is because there is the possibility of damage by static electricity.)
4) To prevent AC leakage, the metal part of the soldering iron should be grounded.
5) Workers should be grounded by a arm band (1MΩ).
6) Care should be taken not to permit the laser pickup to come in contact with clothing, in order to prevent static electricity changes in the clothing to escape from the armband.
7) The laser beam from the pickup should NEVER be directly facing the eyes or bare skin.

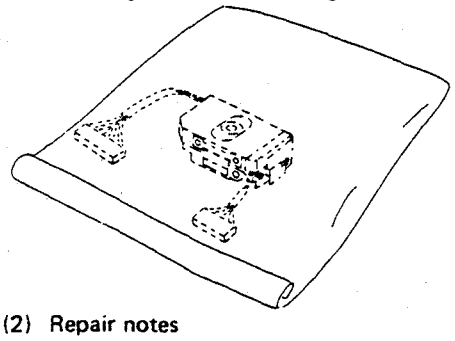


NOTES REGARDING HANDLING OF THE PICKUP

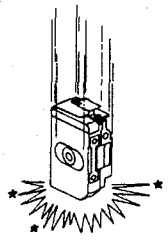
(1) Notes for transport and storage

1) The pickup should always be left in its conductive bag until immediately prior to use.
2) The pickup should never be subjected to external pressure or impact.

Storage in conductive bag



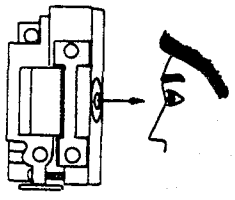
Drop impact



(2) Repair notes

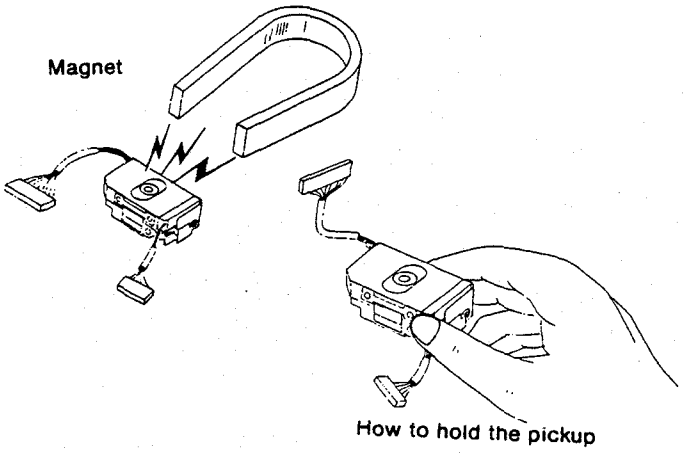
1) The pickup incorporates a strong magnet, and so should never be brought close to magnetic materials.
2) The pickup should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational malfunction and/or damage to the printed circuit board.
3) Each and every pickup is already individually adjusted to a high degree of precision, and for that reason the adjustment point and installation screws should absolutely never be touched.
4) Laser beam may damage the eyes!
   Absolutely never permit laser beams to enter the eyes! Also NEVER switch ON the power to the laser output part (lens, etc.) of the pickup if it is damaged.

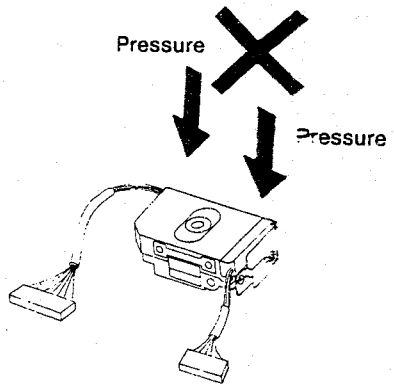
Laser Beam

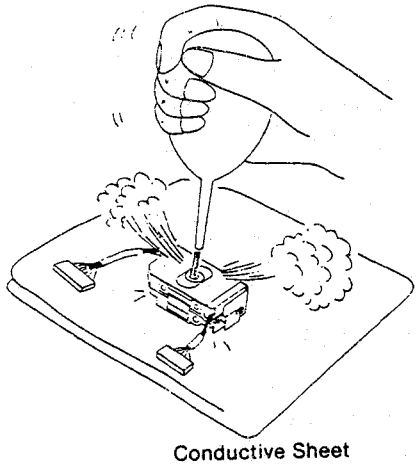


NEVER look directly at the laser beam, and don't let contact fingers or other exposed skin.

5) Cleaning the lens surface
   If there is dust on the lens surface, the dust should be cleaned away by using an air brush (such as used for camera lens). The lens is held by a delicate spring.



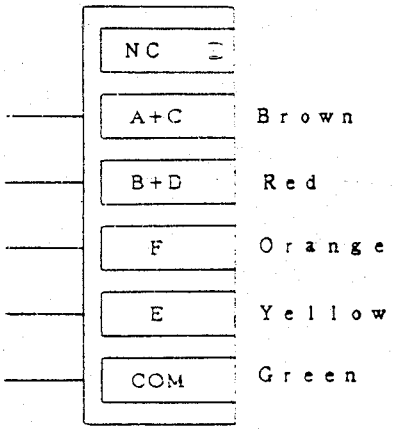




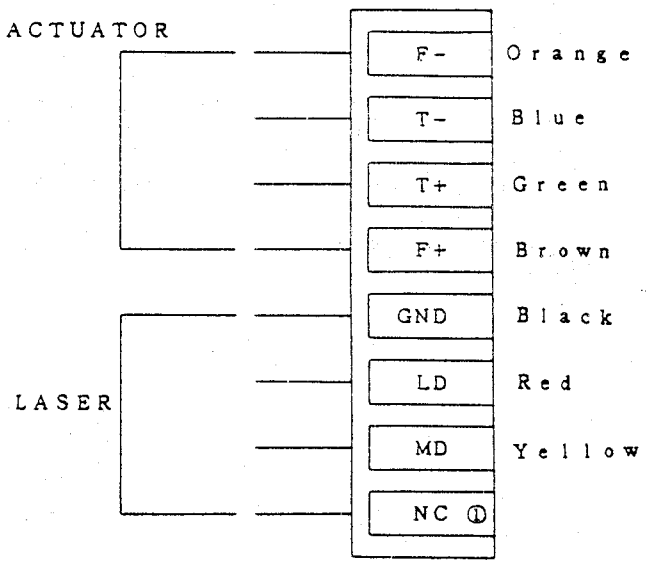
6) Never attempt to disassemble the pickup.

PICKUP DETAIL

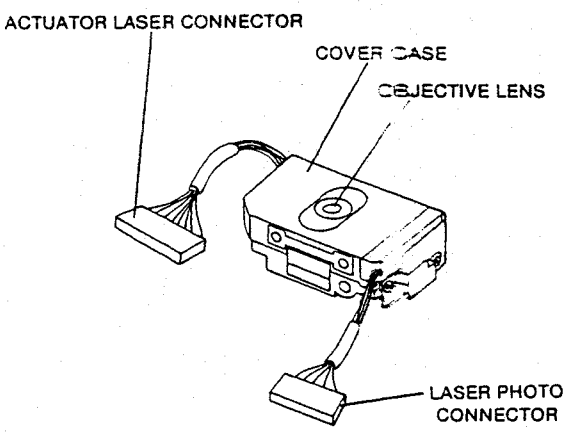
1. LASER PHOTO CONNECTOR

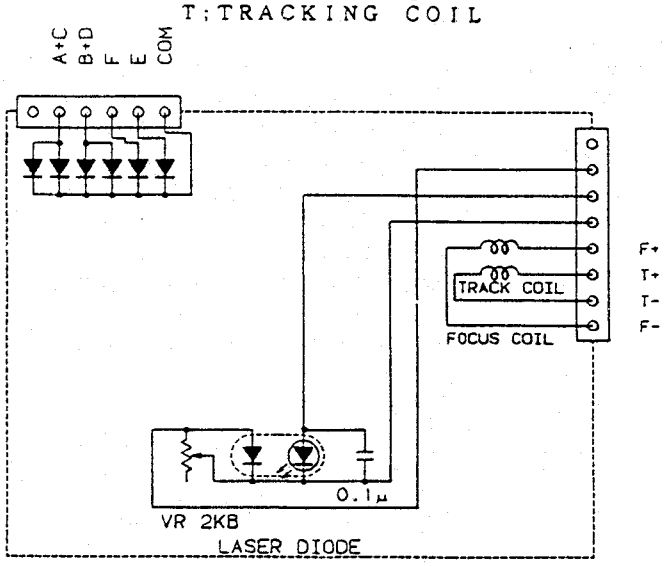


2. ACTUATOR LASER CONNECTOR



F:FOCUS COIL
T:TRACKING COIL



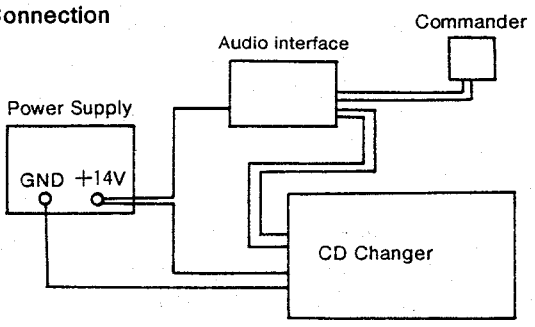


ALIGNMENT PROCEDURES

1. Necessary test CDs and Measuring Instruments.

1) Frequency Counter
2) DC volt meter
3) Test CD (SONY ····· YEDS-18)
4) Magazine
5) Audio Interface and Commander

2. Connection



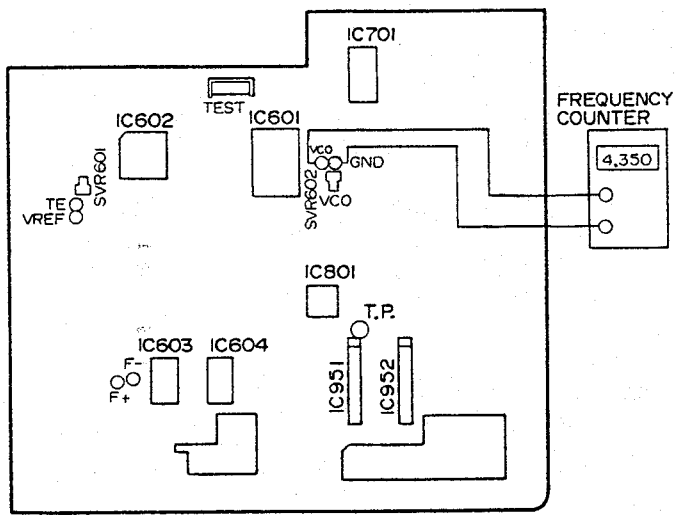
3. Preperation for the Alignment

1) Remove the 4 fixing screws on the bottom plate.
2) Remove the bottom plate of the cabinet.
3) Connect the set and Audio Interface to the 14V DC power supply (min. 1A control, 2A peak)

4. Alignment

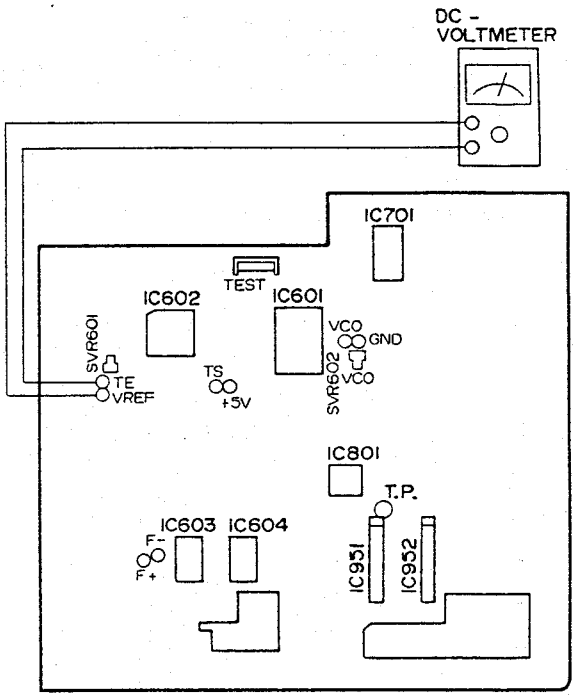
I VCO Free Run Adjustment

1) Load the CD magazine in the drive mechanism.
2) Connect wires to TP GND, and TP VCO.
3) Connect the frequency counter's negative terminal to TP GND and positive terminal to TP VCO.
4) Disconnect to CS601 (Pick up photo detector signals).
5) Press the Play/Pause key on the Commander.
6) Adjust SVR602 until the frequency counter indicates 4.350MHz ± 10kHz
7) Prees the OFF key on the commander.
8) Connect to CS601 and disconnect the wires previously connected to TP GND and TP VCO.



II Traking Balance Adjustment

1) Load the CD magazine in the drive mechanism.
2) Connect wires to TP VREF and TP TE.
3) Connect the DC voltmeter's negative terminal to TP VREF and positive terminal to TP TE.
4) Press the Play/Pause key (▷ / ▯▯) on the commander.
5) Play the test CD SONY YEDS-18 (any track).
6) Put +5V to TP TS.
7) Adjust SVR601 until the DC voltmeter indicates 10mV ± 10mV.
8) Disconnect the wires previously connected to TP VREF and TP TE.

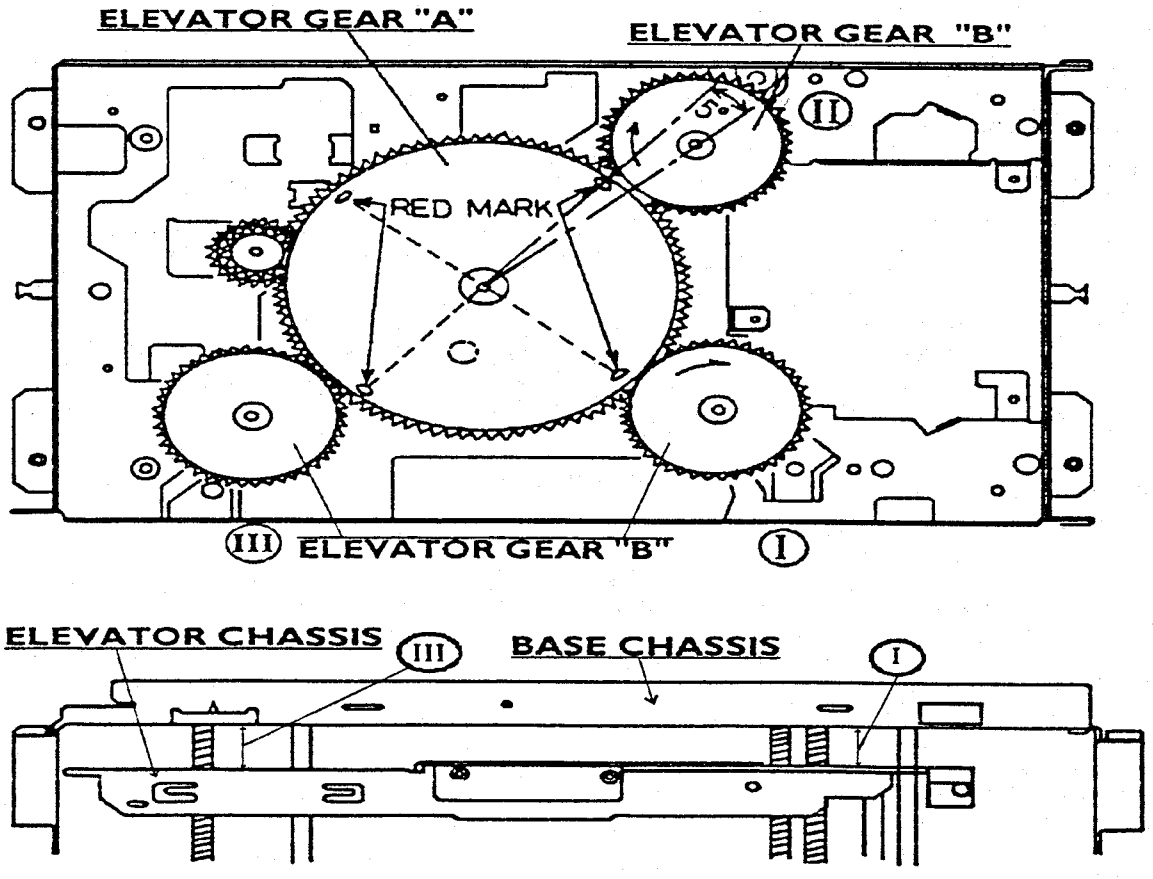


Poor examples resulting from adjustment deviation

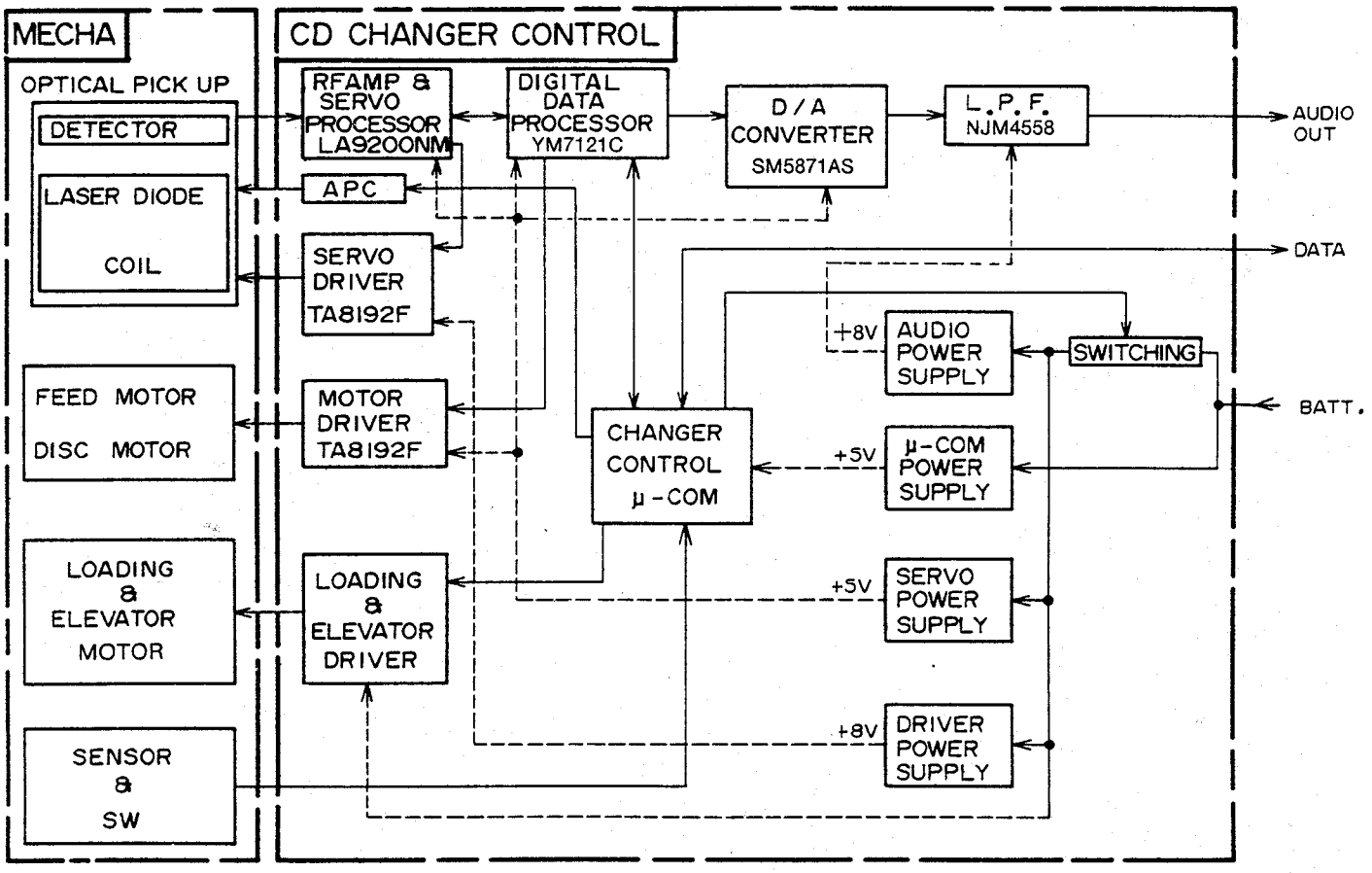
ITEM		DEFECT
1. PLL FREE RUN	High	Noise caused by scratches or dust
	Low	Disc ejection during play
2. E – F BALANCE	Right	Pick up moves toward outer circumference; long access time; high-speed rotation
	Left	Pick up moves toward inner circumference; long access time; high-speed rotation

MECHANICAL ALIGNMENT PROCEDURE

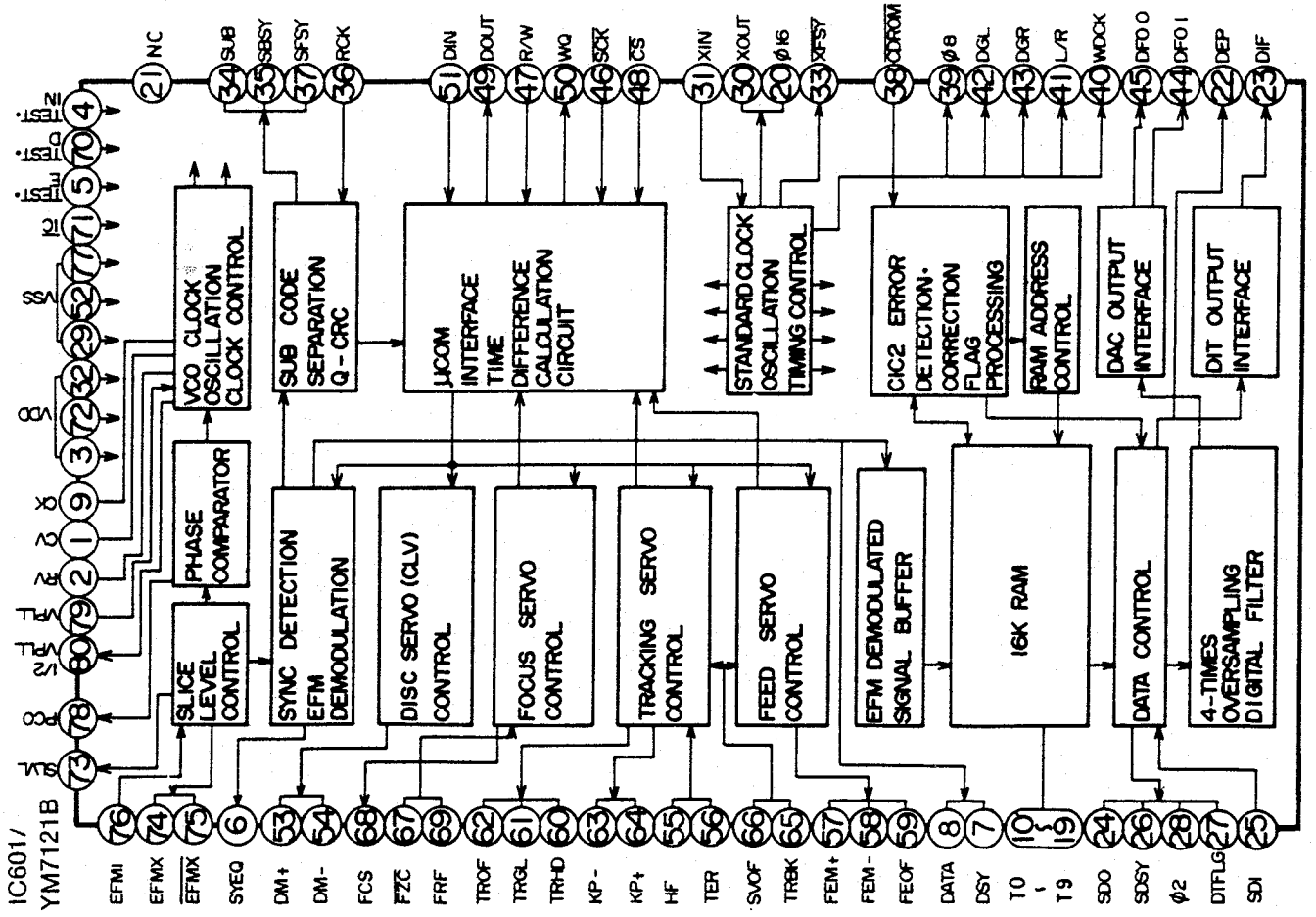
1 . Turn the elevator gears "B"(3 pieces)counter clockwise until the elevator chassis comes to the end of its movement against the base chassis (locked condition).
2 . Turn elevator gear "A" counter-clockwise till the hole in the gear lines up with the photo sensor,then turn the gear counter clockwise 180 degrees to align the second hole with the sensor.
3 . Measure the distance from the base chassis to the elevator chassis with a caliper at each measuring point (I , II ,& III) indicated in Fig.1. When making the measurement,push the elevator chassis towards the base chassis to eliminate slack in the mechanism.The measurements should be as follows:
   Ⓘ 8.5mm Ⓘ 8.5mm Ⓘ 8.0mm
   All measurements must be + or - 0.2mm
4 . If the measurement is out of tolerance life gear "A" to disengage it from the appropriate gear "B" and rotate the gear "B" one cog for each millimeter of adjustment necessary.
5 . After making the adjustments perform steps 1,2,& 3 again until the measurements match the specification.
6 . After confirming the adjustment,apply power to the unit and push the reset button to bring the mechanism to its initial condition.



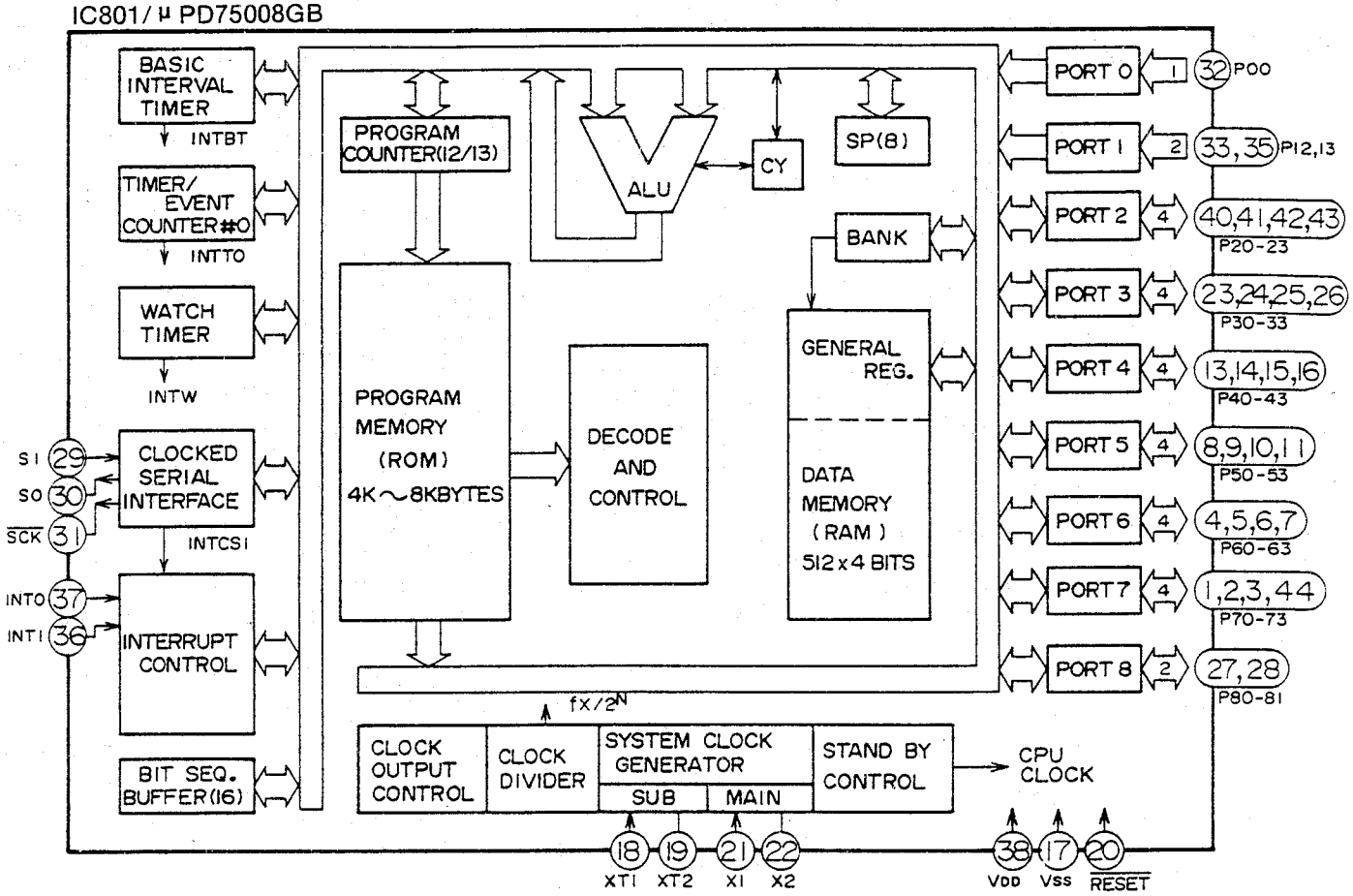
BLOCK DIAGRAM



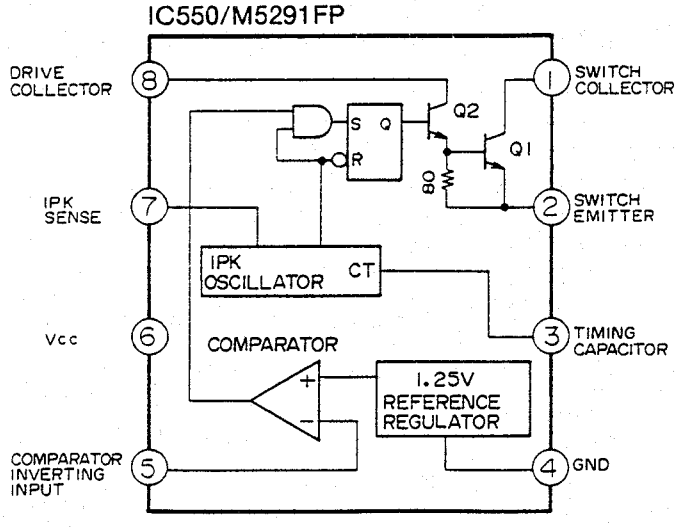
IC EQUIVALENT CIRCUITS



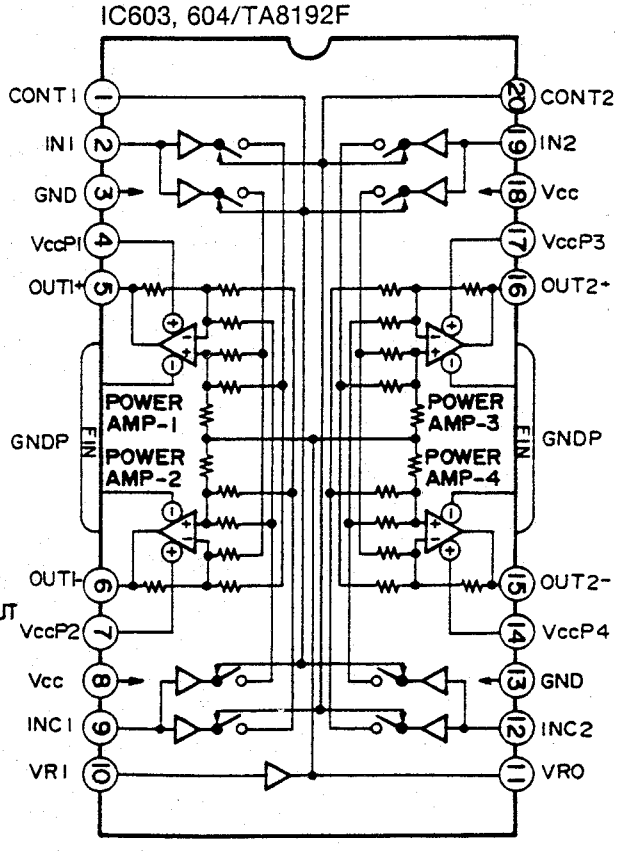
IC801/μPD75008GB



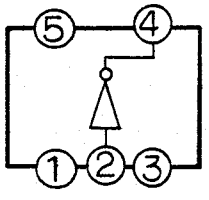
IC550/M5291FP



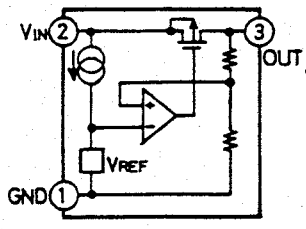
IC603, 604/TA8192F



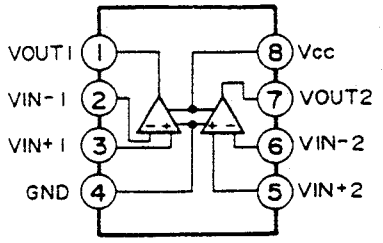
IC608/TC7SU04F



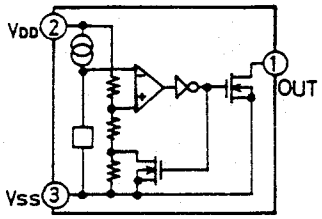
IC501, 552/ S-81250HG-RD



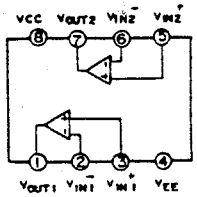
IC605, 607/NJM2904M



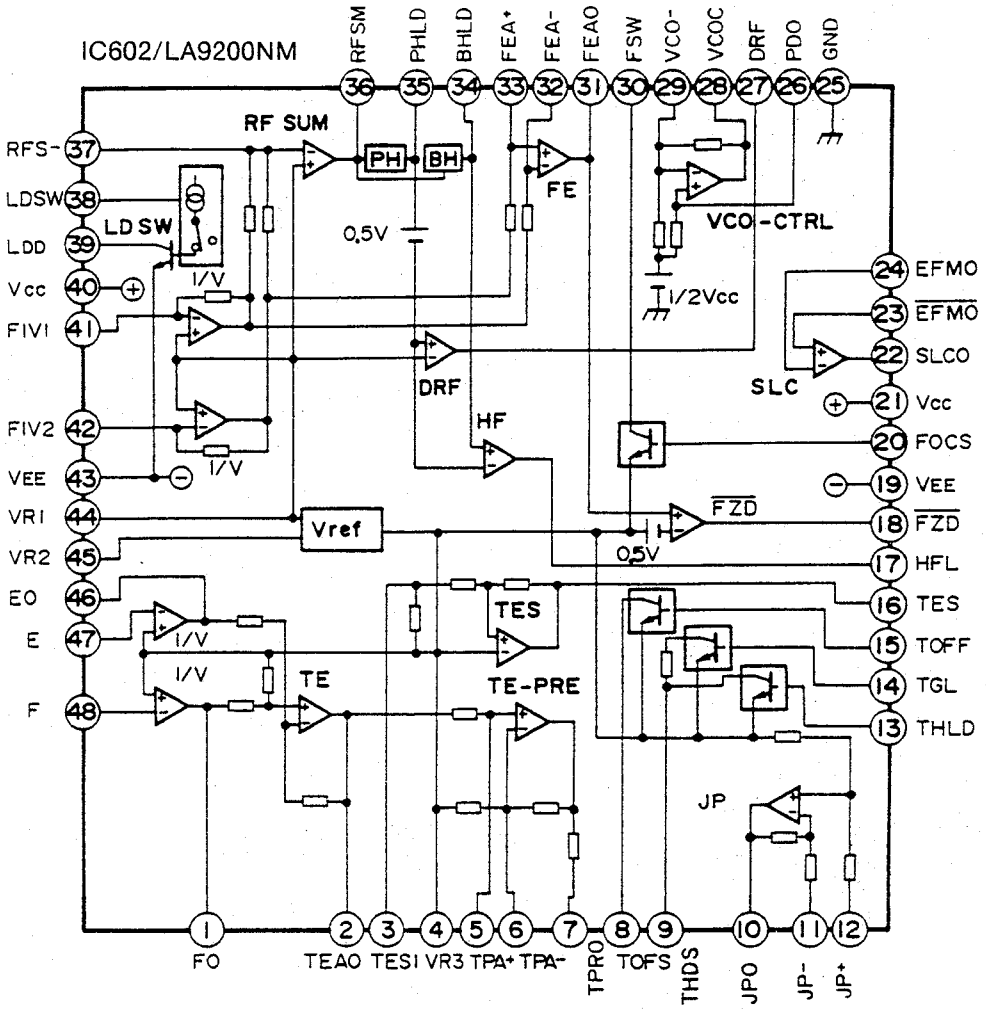
IC553, 610, 802/S-8054HN



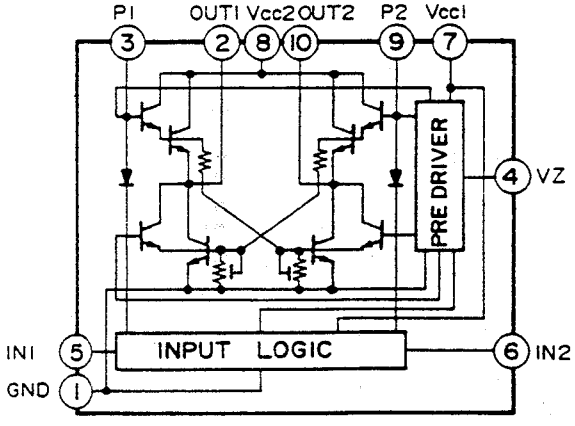
IC606, 702, 703/
RC4565M, RC4558M,
NJM4558M



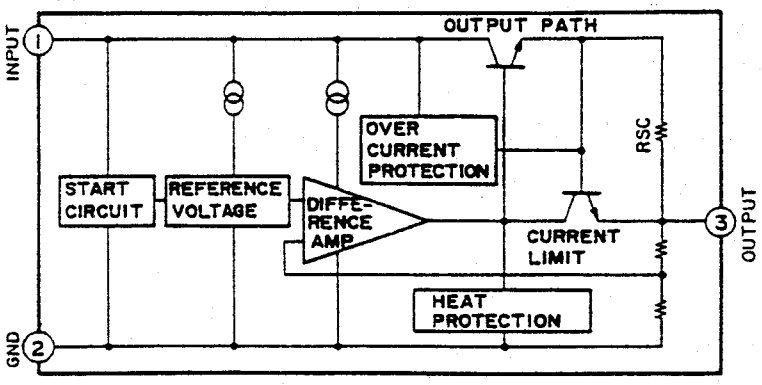
IC602/LA9200NM



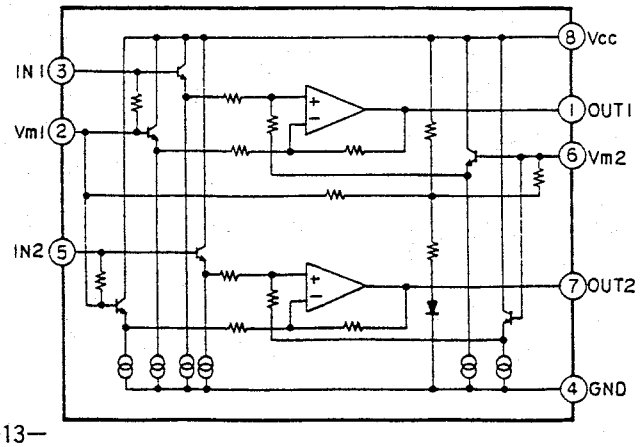
IC951, 952/LB1641



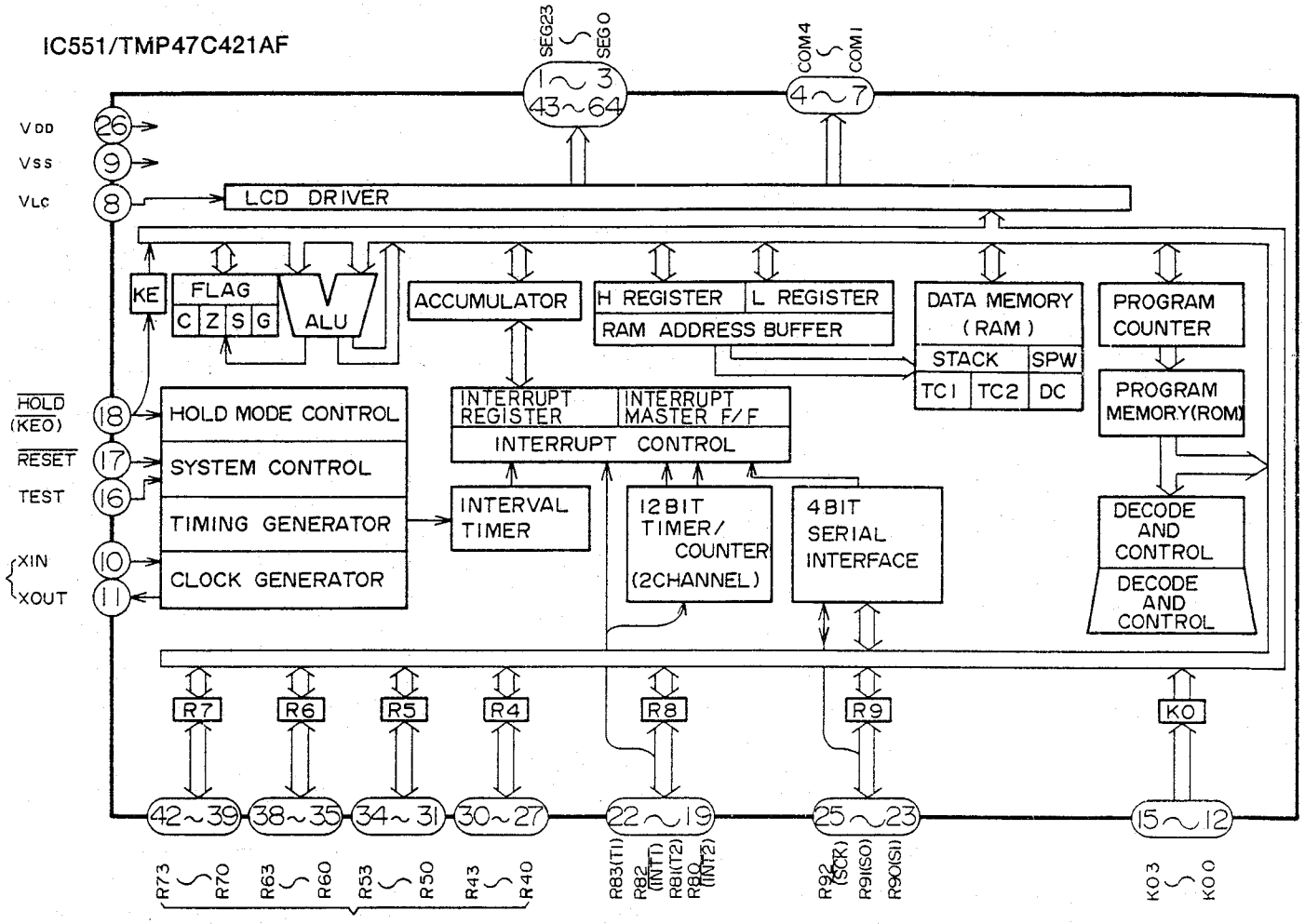
IC502/L78M05T



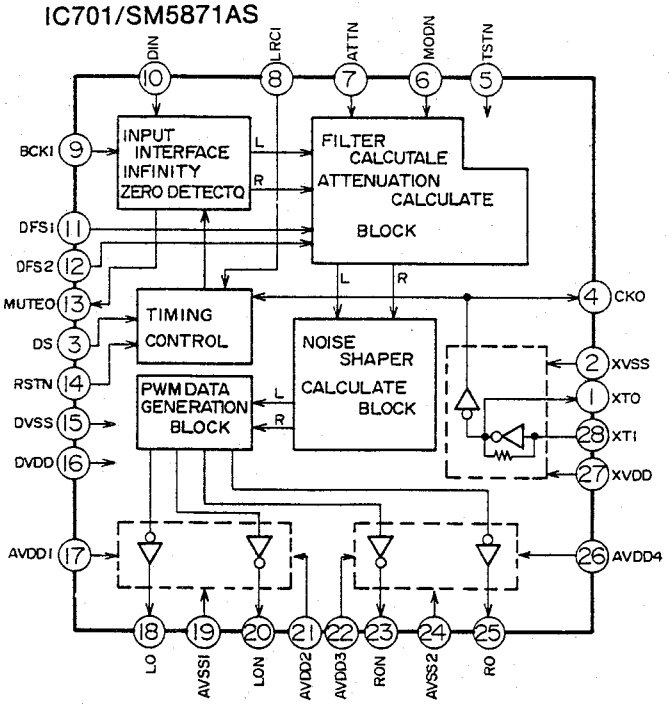
IC51/BA3121F



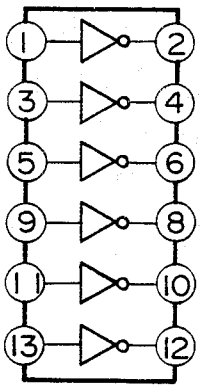
IC551/TMP47C421AF



IC701/SM5871AS



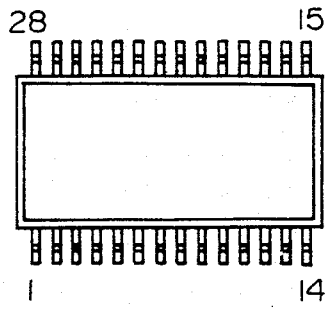
IC901/MC14069UBF



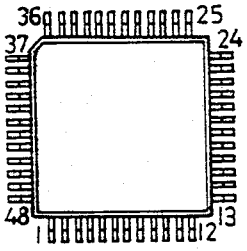
VDD = PIN14
VSS = PIN7

SEMICONDUCTOR CONFIGURATIONS

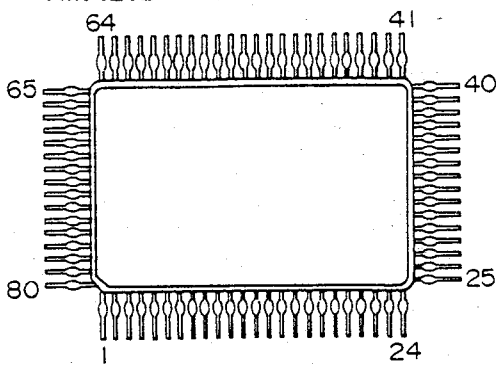
SM5871AS



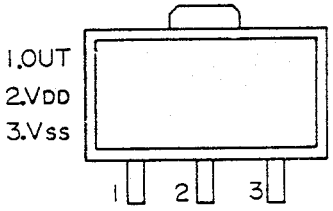
LA9200NM



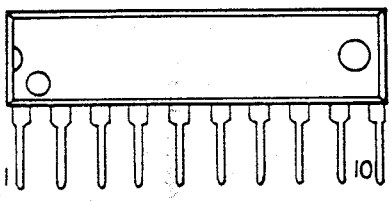
YM7121B



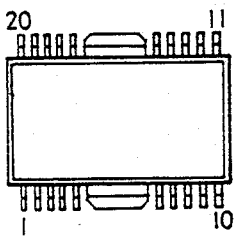
S-81250HG
S-8054HN



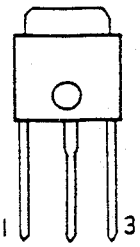
LB1641



TA8192F



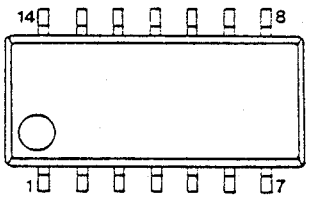
L78M05T



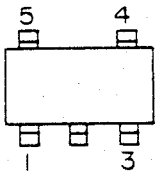
2SA1519
DTA114TK
DTA114YK
DTC114TK
DTA144EK
DTC144EK

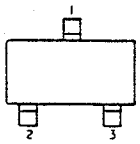
DTC314TK
DTC124XK
DTC114YK
2SC2812L6
2SA1179M6

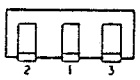
MC14069UBF



TC7SU04F

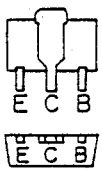






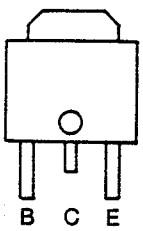
1. OUT/COLLECTOR
2. IN/BASE
3. GND/EMITTER

2SB1124
2SD1621

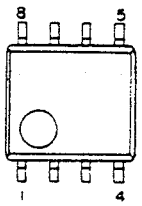


B – BASE
C – COLLECTOR
E – EMITTER

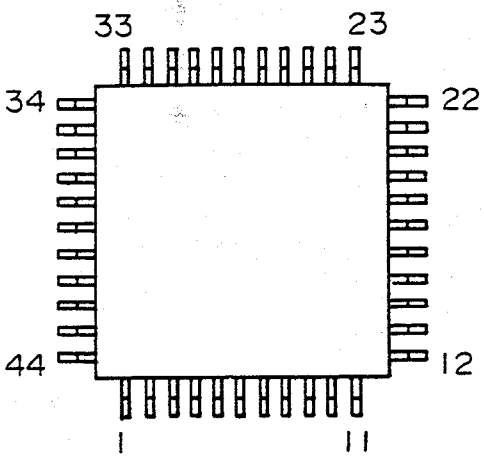
2SB1203



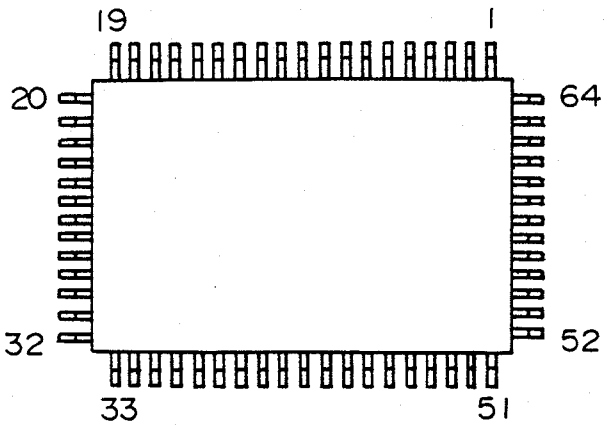
RC4565M, M5291FP,
NJM2904M, RC4558M,
BA3121F, NJM4558M



μPD75008GB



TMP47C421AF



CIRCUIT OPERATION DESCRIPTION

IC701 (SM5871AS)

1 Bit 8 times over sampling twin D/A converter

NOTE I : Input O : Output

Pin No.	I/O	Port Name	Description
1	O	XTO	Crystal oscillator output
2	—	XVss	X'tal Ground
3	I	CKSLN	Normal play mode "L"
4	O	CKO	System clock output terminal
5	I	TSTN	Test terminal "H"
6	I	MODN	Mode control terminal "L"
7	I	ATTN	Soft mute terminal "L"
8	I	LRCI	L/R clock input
9	I	BCKI	Bit clock input
10	I	DIN	Digital audio data input
11	I	DFS1	Deemphasis ON/OFF terminal "L":ON
12	I	DFS2	Deemphasis control terminal "L":Normal
13	O	MUTE0	N.C.
14	I	RSTN	System reset "H"=Normal
15	—	DVSS	Digital ground
16	—	DVDD	Digital power supply (+5V)
17	—	AVDD1	Analog power supply (+5V)
18	O	LO	Lch PWM output (+)
19	—	AVSS1	Analog ground
20	O	LON	Lch PWM output (−)
21	—	AVDD2	Analog power supply +5V
22	—	AVDD3	Analog power supply +5V
23	O	RON	Rch PWM output (−)
24	—	AVSS2	Analog ground
25	O	RO	Rch PWM output (+)
26	—	AVDD4	Analog power supply +5V
27	—	XVDD	X'tal power +5V
28	I	XTI	Crystal oscillator input

IC801 (μPD75008GB)

CD changer control microprocessor < 44 pin C — MOS Flat Package

NOTE I : Input O : Output

Pin No.	I/O	Port Name	Description
1	I	SENSOR A	8cm Disc detection signal input
2	I	SENSOR B	12cm Disc detection signal input
3	I	SENSOR C	Disc chacking detection signal input
4	I	DISC No.	Elevator position detection pulse input
5	I	MODE	Changer 1/2 Mode change signal input
6	O	LOAD +	Output to move loading motor to the direction for pulling in a disc
7	O	LOAD −	Output to move loading motor to the direction for retarning a disc to magazine
8	I	MAGA.SW	Magazine detection SW signal input
9	I	$\overline{\text{CHACK.SW}}$	Elevator home position detect SW signal input
10	I	$\overline{\text{UPDER.SW}}$	Elevator upper position detect SW signal input
11	I	TEST	Test mode signal input
12	—	N.C.	N.C.
13	O	ELV. +	Output signal to move up elevator
14	O	ELV. −	Output signal to move down elevator
15	O	DATA O	Command data signal output to commander
16	O	POWER	Main Power supply ON/OFF signal output
17	—	VSS	Ground
18	—	XT1	N.C.
19	—	XT2	N.C.
20	I	$\overline{\text{RESET}}$	Reset signal input
21	I	OSI	Lock ceramic connection terminal for system clock
22	O	OSO	
23	I	$\overline{\text{LIMIT}}$	Sled motor inner circlelimit detect SW signal input
24	I	FRF	FRF signal input terminal
25	I	TEMP.	Temperature sensor signal input
26	O	PLAY	Play/Search switching output
27	O	F/TOFF	Feed Servo and Tracking Servo ON/OFF signal output
28	O	R/W	Read/Write signal output to YM7121B
29	I	D IN	Status data signal input from YM7121B
30	O	D OUT	Command data signal output to YM7121B
31	O	CLK	Serial clock signal output to YM7121B
32	I	BATT.	Battery ON/OFF signal input
33	I	ACC	ACC ON/OFF signal input
34	—	N.C.	N.C.
35	I	WQ	Request signal input from YM7121B
36	I	STBY	Stand-by release signal input
37	I	DATA I	Status data signal input from commander
38	—	VDD	Power supply (+5V)
39	—	VTH	Power supply (+5V)
40	O	CD+B	Digital 5V and Audio 5V supply ON/OFF signal input
41	O	LASER	Laser diode drive circuit control signal output
42	O	CD 3	Spindle Servo gain control signal output
43	O	MUTE	Audio mute signal output terminal
44	I	EJECT	Eject SW signal input terminal

SPC (Signal Processor & Controller) YM7121C for CD, IC601

NOTE I: Input O: Output

Pin No.	I/O	Port Name	Description
1	I	CV	VCO control voltage input
2	—	RV	Standard voltage terminal of internal VCO
3	—	VDD	Power supply (+5V)
4	—	TEST·IN	Test pin (0V)
5	—	TEST·E	Test pin
6	O	SYEQ	Not used (Check of coincidence of synchronized signal)
7	O	DSY	Not used (Synchronized signal output of serial sigal)
8	O	DATA	Not used (Serial signal output of EFM)
9	O	CK	VCO$\frac{1}{2}$ frequency output f = 4.3218MHz (average)
10	—	T0	Internal RAM test pin
⌇		⌇	⌇
19	—	T9	Internal RAM test pin
20	O	ø16	Not used (X'tal frequency output 16.9344MHz)
21	—	NC	**Not used**
22	O	DEP	Di-emphasis signal "H", di-emphasis is **reguired**
23	O	DIF	Not used (Digital audio interface format output)
24	O	SDO	Serial data output pin, ø2 bit rate and MSB first
25	I	SDI	Serial data input pin
26	O	SDSY	**Lch/ Rch clock terminal.**
27	O	DTFLG	Not used (Data error flag)
28	O	ø2	**Bit clock terminal.**
29	—	Vss	Ground (0V)
30	O	X OUT	Crystal oscillator output (f = 16.9344MHz)
31	I	X IN	Crystal oscillator input (f = 16.9344MHz)
32	—	VDD	Power supply (+5V)
33	O	$\overline{XFSY}$	Not used
34	O	SUB	Not used
35	O	SBSY	Not used
36	I	RCK	Not used
37	O	SFSY	Not used
38	I	$\overline{CD\ ROM}$	Not used
39	I	ø8	**Not used**
40	O	WDCK	Not used
41	O	L/R	**Not used**
42	O	DGL	Not used
43	O	DGR	Not used
44	O	DFO 1	Not used
45	O	DFO 0	**Not used**
46	I	$\overline{SCK}$	Serial data transfer clock input from CPU
47	I	R/W	Read/Write select input
48	I	$\overline{CS}$	Chip select input (0V)
49	O	DOUT	Serial data output for CPU
50	O	WQ	Data transfer mode select pin
51	I	DIN	Serial data input from CPU
52	—	Vss	Ground (0V)
53	O	DM+	Disc Motor speed control signal output pin
54	O	DM−	Disc Motor speed control signal outpt pin
55	I	HF	HF comparator signal input pin
56	I	TER	Tracking error comparator signal input pin
57	O	FEM+	Feed Motor control signal output pin (Forward)
58	O	FEM−	Feed Motor control signal output pin (Backward)
59	O	FEOF	Feed Servo off signal output pin "H" ;off
60	O	TRHD	Tracking error hold control signal output pin "H" ;Hold
61	O	TRGL	Tracking gain control signal output pin "L" ;up
62	O	TROF	Tracking servo off control signal output pin "H" ;off
63	O	KP−	Track kick pulse output pin (forward)
64	O	KP+	Track kick pulse output pin (Backward)
65	I	TR BK	Tracking brake control signal input "H" Brake
66	I	SV OF	Tracking & Feed Servo control signal input "H" off
67	I	$\overline{FZC}$	Focus zero cross signal input pin
68	O	FCS	**Focus off and search control signal output pin**
69	I	FRF	Focus reflection signal input pin
70	—	TEST·D	Test pin
71	I	$\overline{IC}$	Initial clear input pin
72	—	VDD	Power supply (+5V)
73	O	SLVL	EFM signal slice level control output pin
74	O	EFMX	EFM signal with amplitude limiting output
75	O	$\overline{EFMX}$	EFMX inverting output
76	I	EFMI	EFM signal input from RF amp.
77	—	Vss	Ground (0V)
78	O	PCO	EFM signal and VCO/2 phase comparison output pin
79	I	VPLL	Input of DC voltage adapted to VCO free run frequency
80	O	1/2V PLL	1/2 VPLL voltage output

BTL Driver for motor & actuator TA8192F, IC603, 604

Pin No.	I/O	Port Name	Description
1	I	CONT1	Gain control input pin
2	I	IN1	Power amp 1, 2 control signal input pin
3	—	GND	Ground (0V)
4	—	VCCP1	Power amp 1 power supply
5	O	OUT1+	Power amp 1 output pin
6	O	OUT1−	Power amp 2 output pin
7	—	VCCP2	Power amp 2 power supply
8	—	Vcc	Power supply
9	I	INC1	Power amp 1, 2 common control signal input pin
10	I	VRI	Reference voltage input pin
11	O	VRO	Reference voltage output pin
12	I	INC2	Power amp 3, 4 common control signal input pin
13	—	GND	Ground (0V)
14	—	VCCP4	Power amp 4 power supply
15	O	OUT2−	Power amp 4 output pin
16	O	OUT2+	Power amp 3 output pin
17	—	VCCP3	Power amp 3 power supply
18	—	Vcc	Power supply
19	I	IN2	Power amp 3, 4 control signal input
20	I	CONT2	Gain control input pin

IC602 (LA9200NM) RF/SERVO Controller

NOTE I : Input O : Output

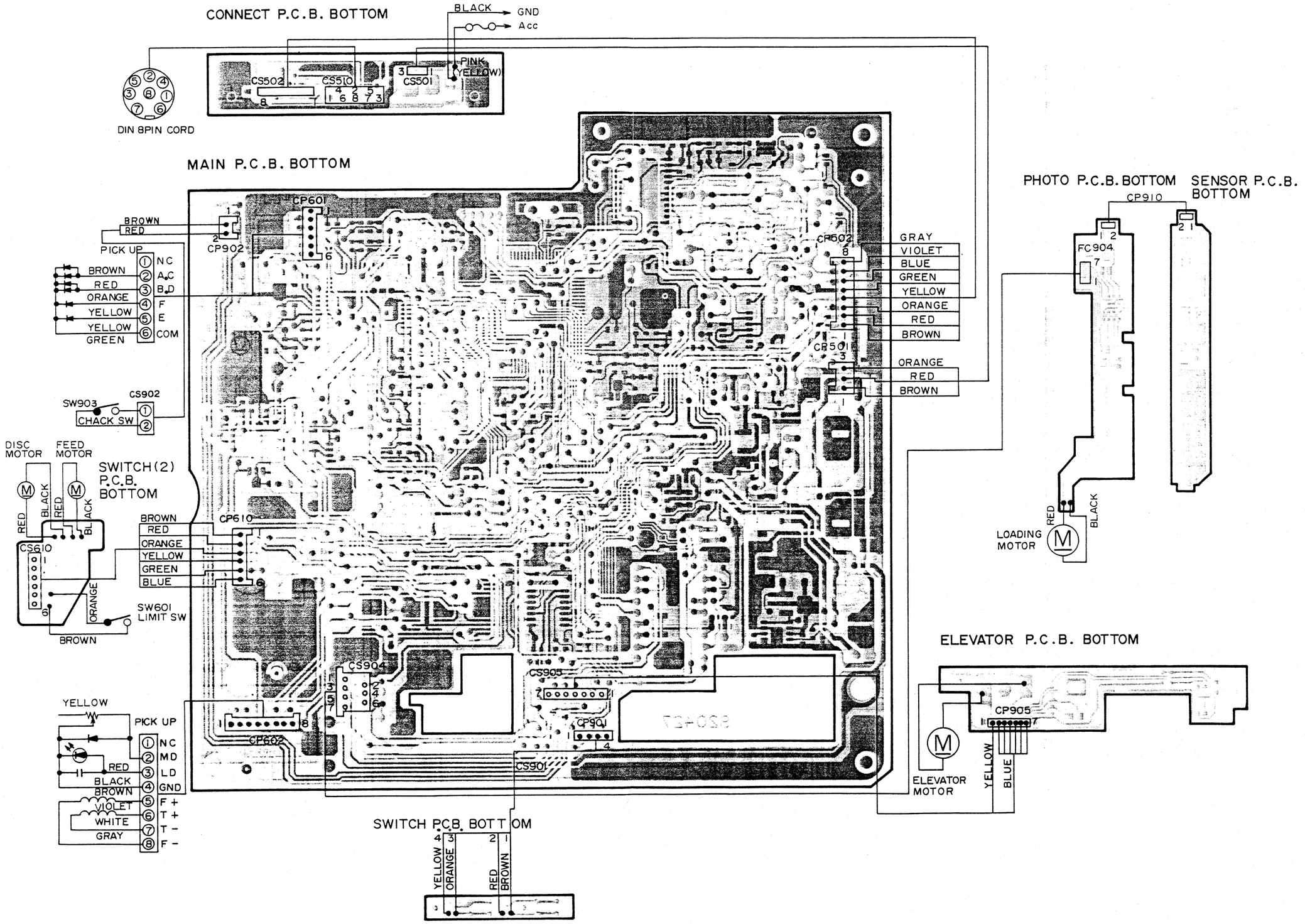
Pin No.	I/O	Port Name	Description
1	O	FO	Photodiode F current-to-voltage converter output
2	O	TEAO	Tracking error amplifier output
3	I	TESI	Tracking error slice comparator input
4	—	VR3	Reference voltage
5	I	TPA+	Tracking error preamplifier non-inverting input
6	I	TPA−	Tracking error preamplifier inverting input
7	O	TPRO	Tracking error preamplfier output
8	—	TOFS	Tracking OFF switch
9	—	THDS	Tracking hold switch
10	O	JPO	Jump pulse amplifier output
11	I	JP−	Jump pulse amplifier inverting input
12	I	JP+	Jump pulse amplifier non-inverting input
13	I	THLD	Tracking hold control
14	I	TGL	Tracking servocontroller gain control
15	I	TOFF	Tracking OFF control
16	O	TES	Tracking error slice comparator output
17	O	HFL	High-frequency level comparator
18	O	$\overline{FZD}$	Focus zero-crossing detector output
19	—	VEE	Supply voltage
20	I	FOCS	Focus switch control
21	—	VCC	Supply voltage
22		SLCO	Slice level control output
23		$\overline{EFMO}$	Eight-to-fourteen modulation control non-inverting input
24		EFMO	Eight-to-fourteen modulation control inverting input
25		GND	Ground
26		PDO	Phase detector input
27	O	DRF	Focus detect RF comparator output
28		VCOC	VCO control amplifier output
29		VCO−	VCO control amplifier inverting input
30	—	FSW	Focus switch
31	O	FEAO	Focus error amplifier output
32	I	FEA−	Focus error amplifier inverting input
33	I	FEA+	Focus error amplifier non-inverting input
34	—	BHLD	Negative-peak (bottom) hold output
35	—	PHLD	Peak hold output
36	O	RFSM	RF summing amplifier output
37	I	RFS−	RF summing amplifier inverting input
38		LDSW	Laser-diode switch
39		LDD	Laser-diode driver
40	—	VCC	Supply voltage
41	I	FIV1	Photodiodes A and C current-to-voltage converter input
42	I	FIV2	Photodiodes B and D current-to-voltage converter input
43	—	VEE	Supply voltage
44	—	VR1	Reference voltage
45	—	VR2	Reference voltage
46	O	EO	Photodiode E current-to-voltage converter output
47	I	E	Photodiode E current-to-voltage converter input
48	I	F	Photodiode F current-to-voltage converter input

IC551 (TMP47C421AF-V311)

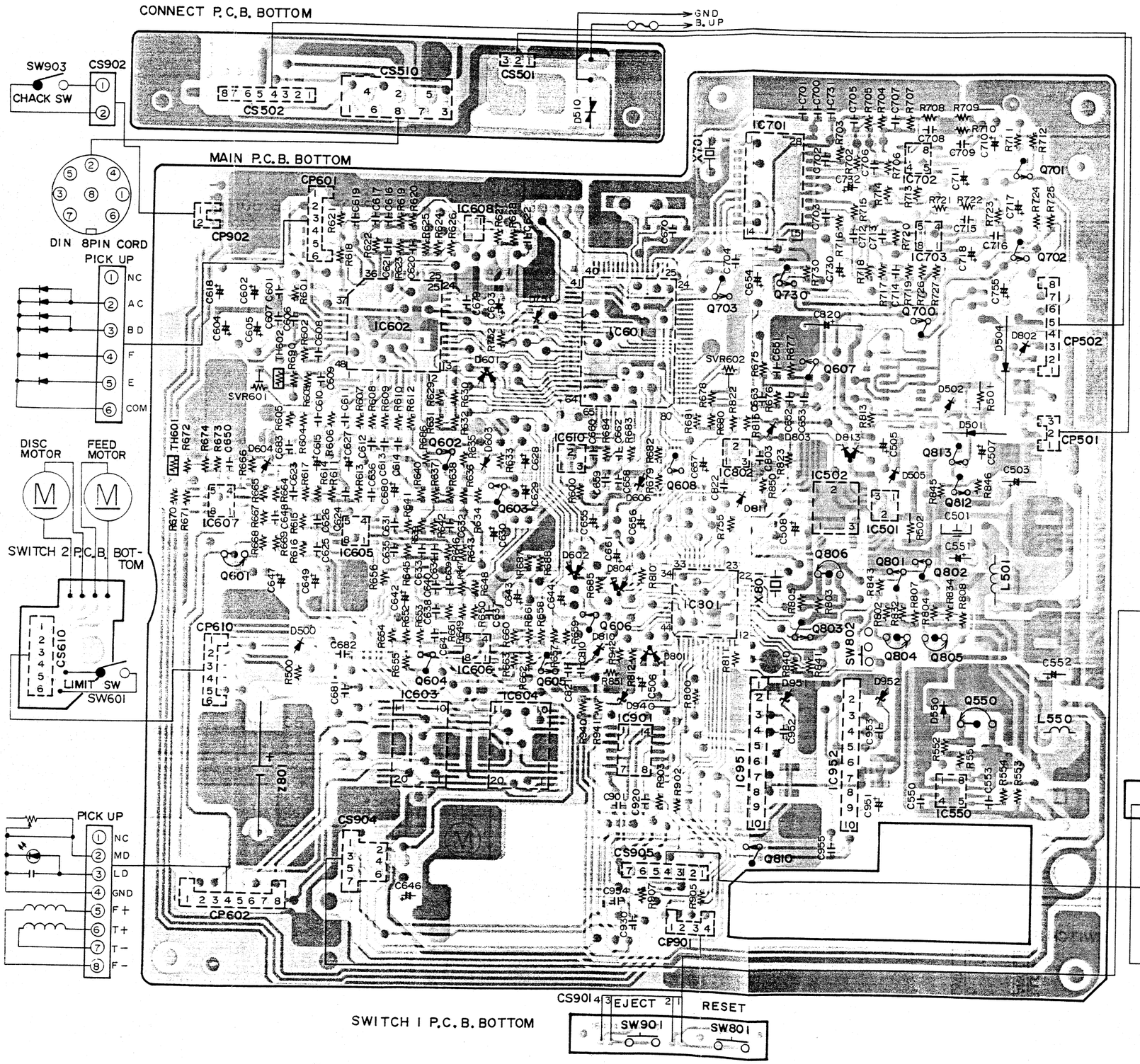
NOTE I : Input O : Output

Pin No.	I/O	Port Name	Description
1		SEG21	
⟆	O	⟆	LCD SEGMENT SIGNAL OUTPUT PIN
3		SEG23	
4	O	COM1	LCD COMMON SIGNAL OUTPUT PIN
5		COM2	
6		COM3	NOT USED
7		COM4	
8	—	V_{LC}	GROUND (0V)
9	—	V_{SS}	GROUND (0V)
10	I	X_{IN}	CRYSTAL RESONATOR CONNECTION PIN (f=3.58MHz)
11	O	X_{OUT}	
12	I	SCAN	SCAN KEY SIGNAL INPUT PIN (ACTIVE LOW)
13	I	REPEAT	REPEAT KEY SIGNAL INPUT PIN (ACTIVE LOW)
14	I	SHUFFLE	SHUFFLE KEY SIGNAL INPUT PIN (ACTIVE LOW)
15	I	INIT	CHANGER INITIALIZE ("H":6DISC, "L":10DISC)
16	I	TEST	NOT USED
17	I	$\overline{RESET}$	RESET SIGNAL INPUT PIN
18	I	$\overline{HOLD}$	HOLD MODE OFF SIGNAL INPUT PIN ("H":OFF)
19	I	LEVEL	IGNITION ON/OFF INPUT PIN
20			NOT USED
21	I	D_{IN}	CHANGER CONTROLLER DATA INPUT PIN
22	I	CH-MODE	CHANGER 1/2 SELECTION KEY SIGNAL INPUT PIN
23	O	D_{OUT}	CHANGER CONTROLLER DATA OUTPUT PIN
24			NOT USED
25			
26	—	V_{DD}	POWER SUPPLY (+5V)
27			NOT USED
28	I	PLAY/PAUSE	PLAY/PAUSE KEY SIGNAL INPUT PIN
29	I	OFF	OFF KEY SIGNAL INPUT PIN
30	I	UP	DISC UP KEY SIGNAL INPUT PIN
31	I	DOWN	DISC DOWN KEY SIGNAL INPUT PIN
32	I	FOW	TRACK UP KEY SIGNAL INPUT PIN
33	I	REV	TRACK DOWN KEY SIGNAL INPUT PIN
34	I	CH-INIT	ONE CHANGER/TWO CHANGERS SELECTION PIN ("H":ONE CHANGER, "L":TWO CHANGERS)
35			NOT USED
36	O	POWER OUT	ACC ON/OFF OUTPUT PIN ("H:ACC ON, "L":ACC OFF)
37			
⟆			NOT USED
42			
43		SEG 0	
⟆	O	⟆	LCD SEGMENT SIGNAL OUTPUT PIN
64		SEG 20	

WIRING DIAGRAM



P.C. BOARD


CONNECT P.C.B. BOTTOM
GND
B. UP
CS902
SW903
CHACK SW
CS510
CS501
CS502
D510
MAIN P.C.B. BOTTOM
CP601
CP902
IC608
IC602
IC601
IC701
IC702
IC703
Q701
Q702
Q703
Q739
Q607
Q608
Q602
Q603
Q601
Q606
Q604
Q605
Q810
Q806
Q801
Q802
Q803
Q804
Q805
Q813
Q812
Q550
CP502
CP501
SVR602
SVR601
TH601
D601
D602
D604
D803
D804
D811
D813
D500
D801
D940
D952
D504
D502
D501
D505
IC610
IC607
IC605
IC606
IC603
IC604
IC901
IC951
IC952
IC501
IC550
X701
X801
L501
L550
Z801
CP610
CP602
CP901
CS904
CS905
CS901
EJECT
RESET
SW901
SW801
SW802
DISC MOTOR
FEED MOTOR
SWITCH 2 P.C.B. BOTTOM
CS610
LIMIT SW
SW601
DIN 8PIN CORD
PICK UP
NC
AC
BD
F
E
COM
PICK UP
NC
MD
LD
GND
F+
T+
T−
F−
SWITCH 1 P.C.B. BOTTOM
CP910
FC904
Q912
SENSOR B
R922
R920
SENSOR C
SENSOR A
R921
Q910
Q911
D910
R910
R911
R912
D911
D912
PHOTO P.C.B. BOTTOM
LOADING MOTOR
SENSOR P.C.B. BOTTOM
ELEVATOR P.C.B. BOTTOM
CP905
SW930
MAGAZINE SW
R931
D930
R930
R932
ELEVATOR MOTOR

SCHEMATIC DIAGRAM

Q601 2SD1621
Q602 2SA1179
Q603,604,605,606
607,701,702
DTC114
Q608 2SC2812

IC601 YM7121C
IC602 LA9200NM
IC603,604
TA8192F

IC610 S-8054HN

IC606 RC4558M
IC608 TC7SU04F

MAIN 1/2

Q NO.	PIN	B	C	E
Q 601		2.5	2.0	2.4
Q 602		2.4	2.4	2.0
Q 603		2.4	2.4	2.0
Q 604		2.4	2.4	2.0
Q 605		2.3	2.3	2.6
Q 606		0	0	2.6
Q NO.	PIN	B	C	E
Q 607		5.0	4.4	0
Q 700		0	5.0	0
Q 701		0	0	—
Q 702		0	0	—
Q 730		7.4	—	8.0
Q 702		0	—	7.4

IC	PIN	1	2	3	4	5	6	7	8	9	10
IC603		8.0	2.5	0	8.0	3.8	4.4	8.0	8.0	2.6	4.0
		11	12	13	14	15	16	17	18	19	20
		4.0	2.6	0	8.0	4.3	4.2	8.0	8.0	2.5	0
IC	PIN	1	2	3	4	5	6	7	8	9	10
IC604		8.0	2.5	0	8.0	4.3	4.1	8.0	8.0	2.6	4.0
		11	12	13	14	15	16	17	18	19	20
		4.0	2.6	0	8.0	3.8	4.4	8.0	8.0	2.5	8.0

FILTER GAIN CONTROLL

IC	PIN	1	2	3	4	5	6	7	8
IC702		3.5	3.5	3.2	3.2	0	3.5	3.5	7.0
IC703		3.5	3.5	3.5	3.5	0	3.2	3.3	7.0

IC	PIN	1	2	3	4	5	6	7	8
IC605		4.8	0	5.0	—	—	2.0	2.0	5.0
IC606		2.6	2.6	2.6	0	2.0	2.0	2.7	5.0
IC607		2.5	0.4	0.4	0	2.6	3.9	0	5.0

IC	PIN	9	10	11	12	13	14
IC605		1.7	4.9	0	5.0	2.5	2.5
IC606		2.0	2.2	2.5	2.5	2.2	2.2
IC607		5.0	2.5	2.5	2.5	2.2	2.2

IC	PIN	15	16	17	18	19	20
IC605		2.5	2.5	2.5	2.5	2.5	0
IC606		2.5	2.5	2.5	2.5	2.5	0
IC607		2.5	2.5	2.5	2.5	2.5	0

NOTES
1. RESISTOR VALUES IN OHMS. (K = 1000)
2. CAPACITOR VALUES IN MICRO FARADS. (P = μμF)
3. MODIFICATION MAY BE DONE WITHOUT ANY NOTICE.
4. THE MENTIONED FIGURE OF UNIT ON THE IC ARE VOLTS.

IC701 SM5871AS
IC702,703 RC4558M

Q701~703 UN2215
Q700 UN2213
Q730 2SC2812

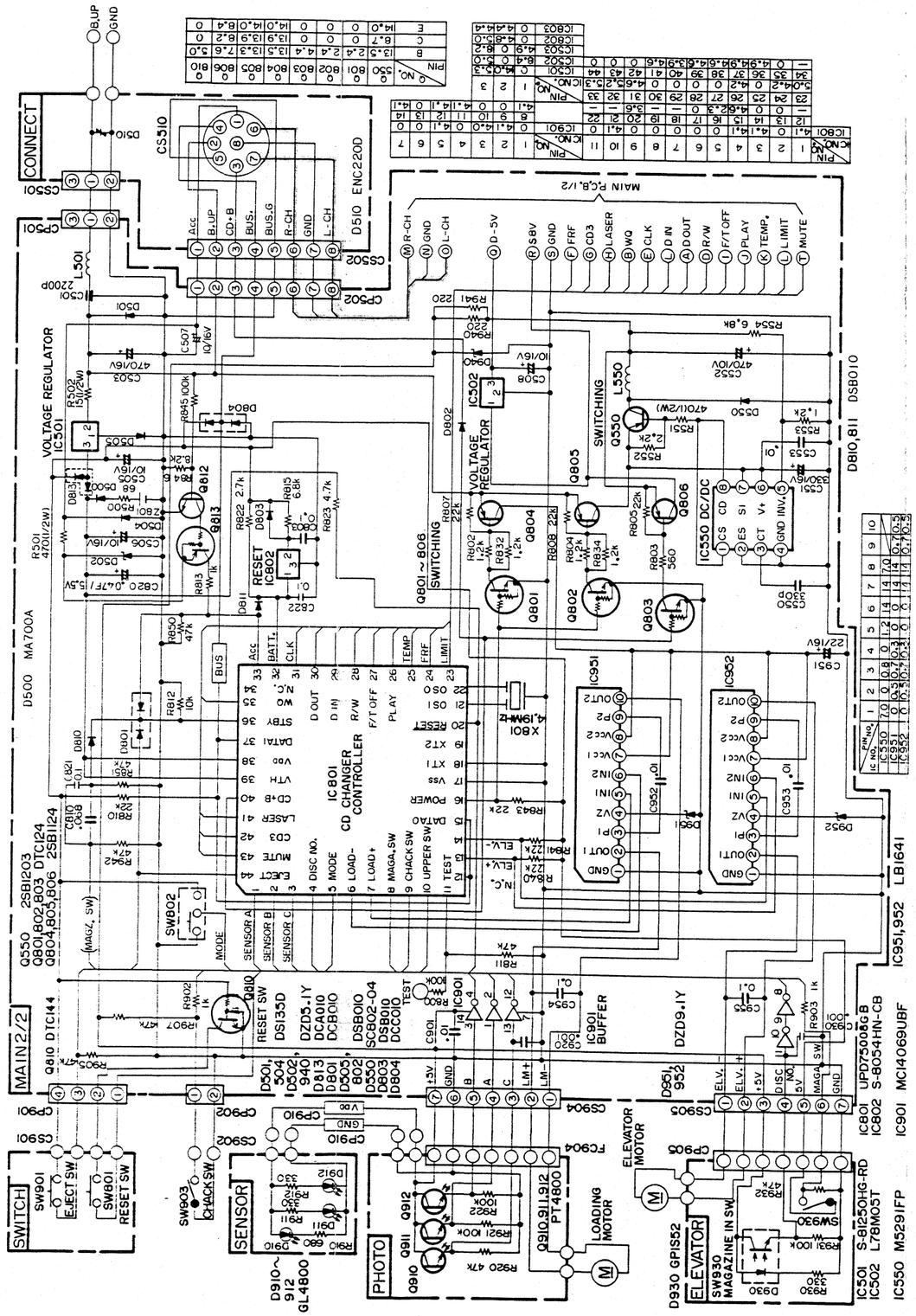
IC	PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
IC602		2.0	—	—	2.5	—	—	—	—	—	2.5	2.5	2.5	0	5.0	0	—	0	4.0	0	0	5.0	N.C	N.C
		24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
		N.C	0	N.C	4.0	N.C	N.C	2.4	—	—	—	—	3.6	—	1.3	N.C	N.C	5.0	1.5	1.3	0	1.5	2.5	2.0	2.5	2.5

IC	PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
IC601		1.8	2.4	5.0	0	N.C	—	N.C	N.C	N.C	N.C	N.C	N.C	N.C	N.C	N.C	N.C	N.C	N.C	N.C
		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		N.C	N.C	5.0	N.C	—	—	N.C	N.C	N.C	0	—	—	5.0	N.C	N.C	N.C	N.C	N.C	N.C	—	N.C
		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
		—	N.C	N.C	N.C	—	—	—	5.0	—	—	—	0	—	0	0	—	0	0	0	0	5.0
		62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80		
		0	0	0	0	4.0	0	4.0	N.C	5.0	5.0	—	2.5	2.5	—	0	—	3.8	1.8			

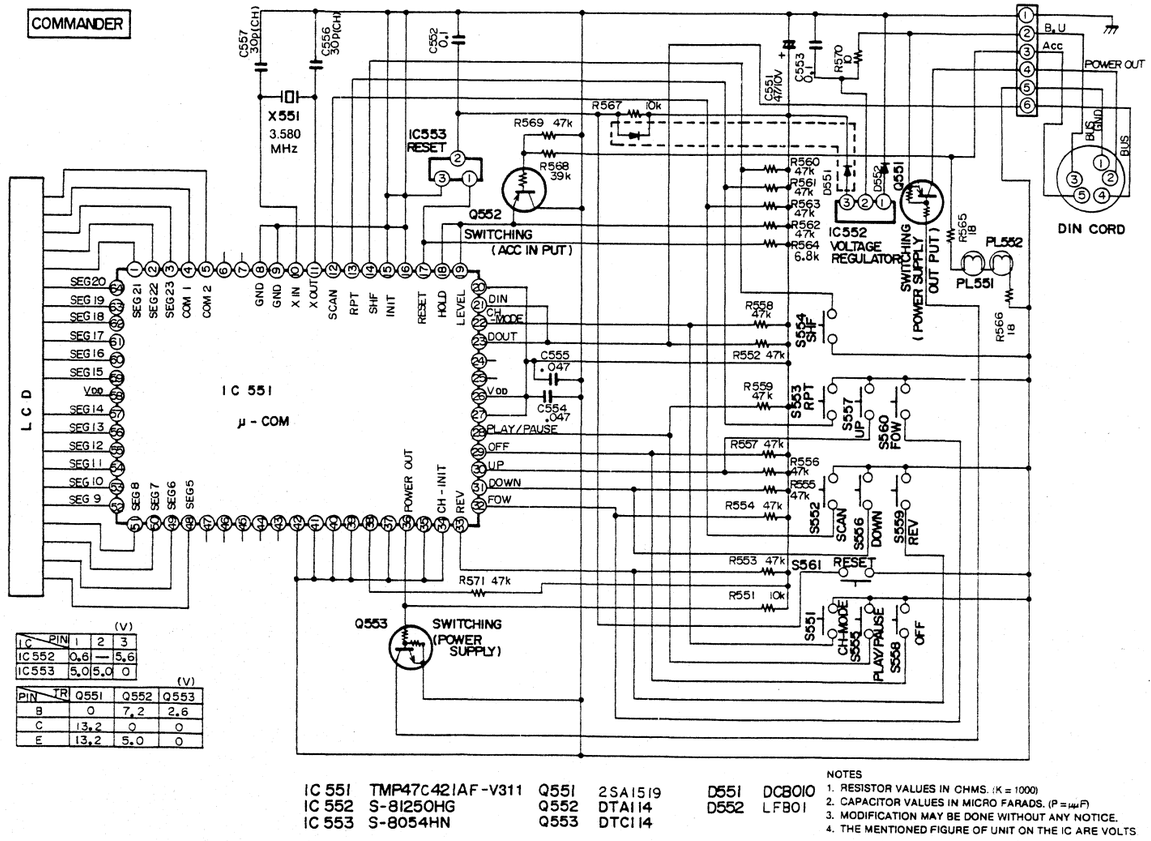
(V)

IC	PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC701		5.0	0	5.0	5.0	—	—	0	0	—	—	5.0	0	0	0	0	—	—	5.0	—	0
		21	22	23	24	25	26	27	28												
EMP/ ON/OFF		0	0	5.0	—	—	—	5.0													
IC702		2.5	0	—	2.5	—	—	5.0	2.5	0	—	—	—	0	0	—	—	0	—	—	
IC703		—	—	—	0	—	—	—	5.0												
IC704		—	—	—	0	—	—	—	5.0												

MAIN P.C.B. 2/2



SCHEMATIC DIAGRAM (COMMANDER)



P/N	(V)		
IC	1	2	3
IC552	0.6	11	5.6
IC553	5.0	5.0	0

P/N	TR	Q551	Q552	Q553
B		0	7.2	2.6
C		13.2	0	0
E		13.2	5.0	0

IC 551 TMP47C421AF-V311
IC 552 S-81250HG
IC 553 S-8054HN

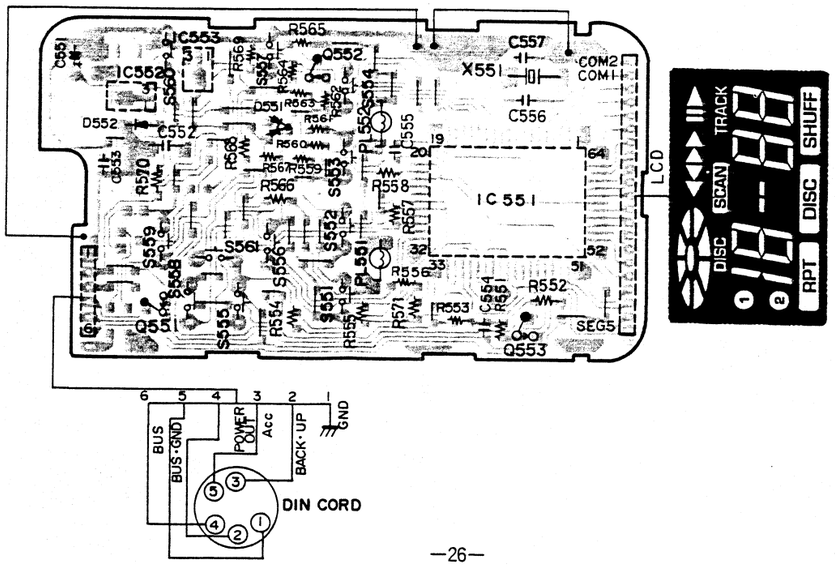
Q551 2SA1519
Q552 DTA114
Q553 DTC114

D551 DCB010
D552 LFB01

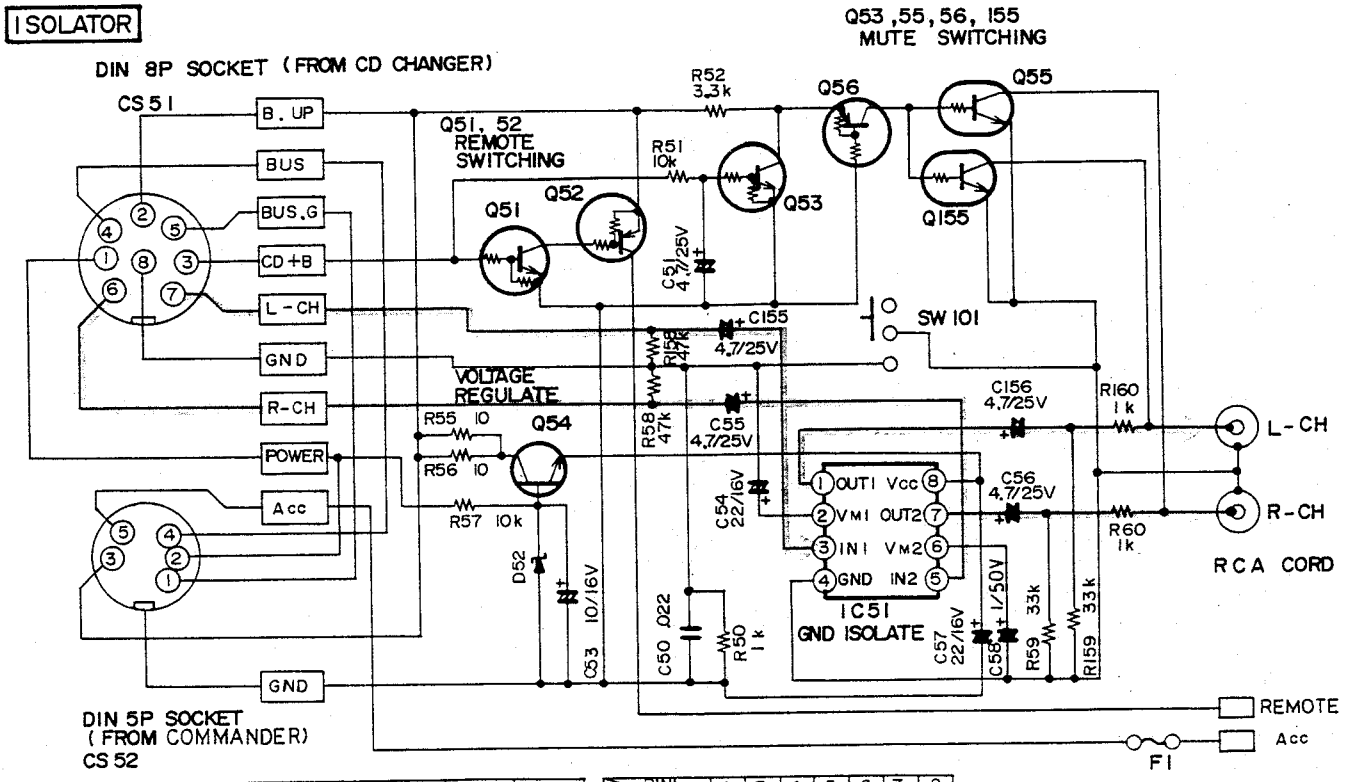
NOTES
1. RESISTOR VALUES IN OHMS. (K = 1000)
2. CAPACITOR VALUES IN MICRO FARADS. (P = μμF)
3. MODIFICATION MAY BE DONE WITHOUT ANY NOTICE.
4. THE MENTIONED FIGURE OF UNIT ON THE IC ARE VOLTS

P.C. BOARD (COMMANDER)

COMMANDER P.C.B. BOTTOM



SCHEMATIC DIAGRAM (AUDIO INTERFACE)

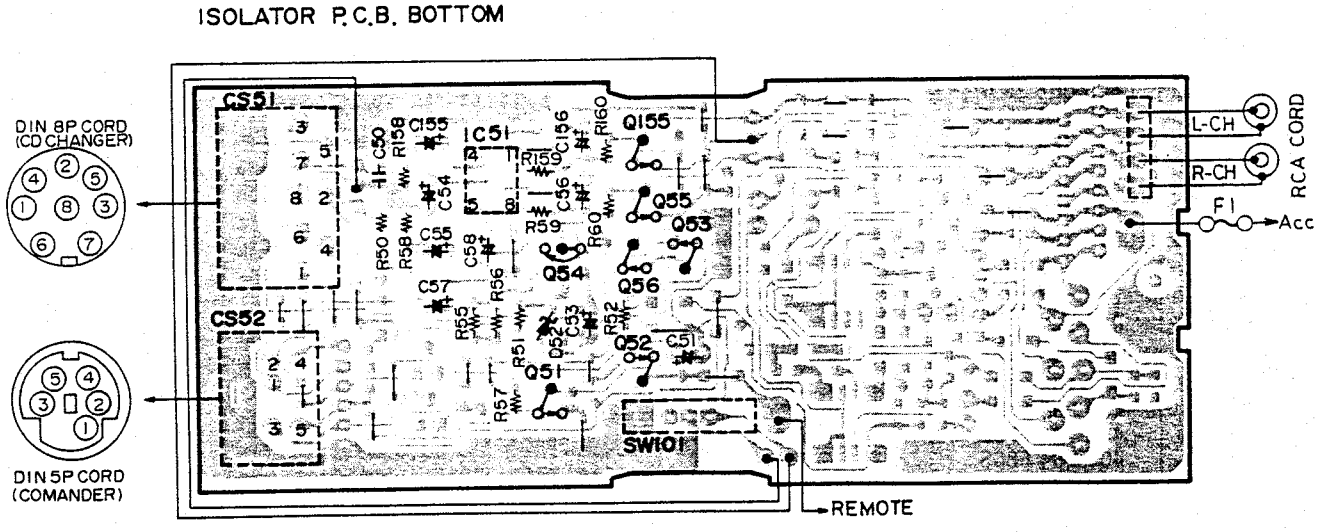


PIN \ Q.NO	Q51	Q52	Q53	Q54	Q56	Q55	Q155
	5.0	0	4.0	8.9	0	8.5	8.5
B	0	5.0	0		0	0	0
	0	14.0	0	14.0	0	0	0
C	0	0	8.5		8.5	0	0
	0	14.0	0	8.3	0	0	0
E	0	0	0		8.5	0	0

IC \ PIN	1	2	3	4	5	6	7	8
IC 51	5.0	4.8	4.5	0	4.5	4.5	5.0	8.3

IC 51 BA3121F
Q51, 53 DTC114
Q52 2SA1519
Q54 2SD1621
Q56 DTA114
Q55, 155 DTC314
D52 DZD9.1Y

P.C. BOARD (AUDIO INTERFACE)



ELECTRICAL PARTS LIST

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
		CONTROLS		
SVR601	632 527 3006	PRESET RESISTOR, 100K	1	
SVR602	632 527 2993	PRESET RESISTOR, 10K	1	
X701	632 581 6982	RESONATOR,XTAL,16.9344MHZ	1	
X801	632 614 3339	RESONATOR,CERAM,4.194MHZ	1	
		COIL & TRANSFORMER		
L501	632 265 9605	CHOKE COIL	1	
	632 568 3232	INDUCTOR,SK } or		
L550	632 546 3704	CHOKE COIL, 680UH	1	
		SEMICONDUCTORS		
D500	407 104 3607	DIODE MA704A	1	
D501	407 005 1603	DIODE DS135D	1	
D502	407 071 6502	ZENER DIODE DZD5.1Y	1	
D504	407 005 1603	DIODE DS135D	1	
D505	407 069 4909	DIODE DSB010	1	
D510	407 129 3507	VARISTOR ENC220D-07B	1	
D550	407 146 3405	DIODE SC802-04	1	
	407 124 0709	DIODE SFPB-64 } or		
D601	407 004 0607	DIODE DCB010	1	
D602	407 004 0607	DIODE DCB010	1	
D603	407 069 4909	DIODE DSB010	1	
D604	407 069 4909	DIODE DSB010	1	
D606	407 071 6106	ZENER DIODE DZD4.7Y	1	
D751	407 069 4909	DIODE DSB010	1	
D801	407 004 0607	DIODE DCB010	1	
D802	407 069 4909	DIODE DSB010	1	
D803	407 069 4909	DIODE DSB010	1	
D804	407 004 1000	DIODE DCC010	1	
D810	407 069 4909	DIODE DSB010	1	
D811	407 069 4909	DIODE DSB010	1	
D813	407 004 0102	DIODE DCA010	1	
D910-912	407 138 3901	LED GL4800	3	
D930	407 155 7906	PHOTO COUPLE GP1S52V	1	
	407 098 3805	PHOTO COUPLE GP1S52 } or		
D940	407 071 6502	ZENER DIODE DZD5.1Y	1	
D951	407 071 8902	ZENER DIODE DZD9.1Y	1	
D952	407 071 8902	ZENER DIODE DZD9.1Y	1	
IC501	410 061 9001	IC S-81250HG-RD-T2	1	
	409 231 0702	IC MC147805AUT } or		
IC502	409 124 5302	IC L78M05T	1	
IC550	409 067 2307	IC M5291FP	1	
IC601	409 222 5105	IC YM7121B	1	
	409 286 1501	IC YM7121C } or		
IC602	409 124 6507	IC LA9200NM	1	
IC603	409 225 3702	IC TA8192F	1	
IC604	409 225 3702	IC TA8192F	1	
IC605	409 154 6607	IC LM2904M	1	
	409 039 6609	IC NJM2904M } or		
IC606	409 198 8001	IC RC4558M	1	
	409 039 7804	IC NJM4558M } or		
IC607	409 154 6607	IC LM2904M	1	
	409 039 6609	IC NJM2904M } or		
IC608	409 155 8105	IC TC7SU04F	1	
	409 238 3409	IC SC7SU04F } or		
IC610	409 181 5703	IC S-8054HN-CB	1	
IC701	409 284 5808	IC SM5871AS	1	
IC702, 703	409 198 8001	IC RC4558M	2	
	409 039 7804	IC NJM4558M } or		
IC801	410 153 1401	IC UPD75008GB-703-3B4	1	
IC802	409 181 5703	IC S-8054HN-CB	1	
IC901	409 065 9308	IC MC14069UBF	1	
IC951	409 114 4803	IC LB1641	1	
IC952	409 114 4803	IC LB1641	1	

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
Q550	405 030 7003	TR 2SB1203-S	1	
	405 030 7102	TR 2SB1203-T (or)		
Q601	405 022 6205	TR 2SD1621-S	1	
	405 022 6304	TR 2SD1621-T (or)		
Q602	405 002 6706	TR 2SA1179-M6	1	
Q603	405 045 2703	TR 2SC4047		
	405 000 3608	TR DTC114YK (or)	1	
	405 035 2201	TR UN2214		
Q604-	405 045 1706	TR 2SC3859		
607	405 029 3207	TR DTC114TK (or)	4	
	405 110 4403	TR UN2215		
Q608	405 015 8704	TR 2SC2812-L6		
	405 111 2408	TR 2SD601A-R (or)	1	
	405 024 3509	TR 2SD601-R		
Q700	405 110 4304	TR UN2113		
	405 003 7108	TR 2SA1341-TA (or)	1	
	405 000 2007	TR DTA144EK-T97		
Q701,	405 110 4403	TR UN2215		
702,	405 045 1706	TR 2SC3859 (or)	3	
703	405 029 3207	TR DTC114TK		
Q730	405 015 8704	TR 2SC2812-L6	1	
	405 111 2408	TR 2SD601A-R (or)		
Q801-	405 029 3405	TR DTC124XK	3	
803				
Q804,	405 047 2701	TR 2SB1124-T		
805,	405 047 2206	TR 2SB1123-T (or)	3	
806	405 047 2008	TR 2SB1123-S		
Q810	405 029 3504	TR DTC144EK		
	405 018 1900	TR 2SC3395-TA (or)	1	
	405 110 4700	TR UN2213		
Q812	405 015 8704	TR 2SC2812-L6	1	
Q813	405 029 3009	TR DTA114YK-T97	1	
	405 035 2102	TR UN2114 (or)		
Q910-	407 145 3406	PHOTO DIODE PT4800F	3	
912	407 145 3307	PHOTO DIODE PT4850F (or)		
TH601	408 013 0305	TH NTCCS20123BH102KCTH1	1	
TH602	408 011 3001	TH NTCCS20123NH153KCTH1	1	
		RESISTORS		
R500	401 038 8905	MT-GLAZE 68 JA 1/10W	1	
R501	401 147 9206	MT-GLAZE 470 JA 1/2W	1	
R502	401 165 8007	MT-GLAZE 15 JA 1/2W	1	
R551	401 147 9206	MT-GLAZE 470 JA 1/2W	1	
R552	401 038 0701	MT-GLAZE 2.2K JA 1/10W	1	
R553	401 037 6704	MT-GLAZE 1.2K JA 1/10W	1	
R554	401 038 9209	MT-GLAZE 6.8K JA 1/10W	1	
R600	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R601	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R602	401 037 8104	MT-GLAZE 150K JA 1/10W	1	
R603	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R604	401 039 0502	MT-GLAZE 82K JA 1/10W	1	
R605	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R606	401 038 0701	MT-GLAZE 2.2K JA 1/10W	1	
R607	401 038 2200	MT-GLAZE 27K JA 1/10W	1	
R608	401 038 6307	MT-GLAZE 470 JA 1/10W	1	
R609	401 038 9209	MT-GLAZE 6.8K JA 1/10W	1	
R610	401 038 5300	MT-GLAZE 39K JA 1/10W	1	
R611	401 038 2200	MT-GLAZE 27K JA 1/10W	1	
R612	401 039 0403	MT-GLAZE 8.2K JA 1/10W	1	
R613	401 038 3801	MT-GLAZE 330K JA 1/10W	1	
R614	401 038 5300	MT-GLAZE 39K JA 1/10W	1	
R615	401 038 5409	MT-GLAZE 390K JA 1/10W	1	
R616	401 038 2309	MT-GLAZE 270K JA 1/10W	1	
R617	401 038 7601	MT-GLAZE 560 JA 1/10W	1	
R618	401 037 9309	MT-GLAZE 18K JA 1/10W	1	
R619	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R620	401 038 0701	MT-GLAZE 2.2K JA 1/10W	1	
R621	401 038 0701	MT-GLAZE 2.2K JA 1/10W	1	

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
R622	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R623	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R624	401 038 9209	MT-GLAZE 6.8K JA 1/10W	1	
R625	401 038 5102	MT-GLAZE 3.9K JA 1/10W	1	
R626	401 037 8005	MT-GLAZE 15K JA 1/10W	1	
R627	401 038 6406	MT-GLAZE 4.7K JA 1/10W	1	
R628	401 038 6307	MT-GLAZE 470 JA 1/10W	1	
R629-632	401 038 0701	MT-GLAZE 2.2K JA 1/10W	4	
R633	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R634	401 039 0502	MT-GLAZE 82K JA 1/10W	1	
R635	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R636	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R637	401 038 3603	MT-GLAZE 3.3K JA 1/10W	1	
R638	401 038 3603	MT-GLAZE 3.3K JA 1/10W	1	
R639	401 037 8104	MT-GLAZE 150K JA 1/10W	1	
R640	401 037 6704	MT-GLAZE 1.2K JA 1/10W	1	
R641	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R642	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R643	401 038 0602	MT-GLAZE 220 JA 1/10W	1	
R645	401 038 3801	MT-GLAZE 330K JA 1/10W	1	
R646	401 038 2200	MT-GLAZE 27K JA 1/10W	1	
R647	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R648	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R649	401 038 5409	MT-GLAZE 390K JA 1/10W	1	
R650	401 038 3801	MT-GLAZE 330K JA 1/10W	1	
R651	401 038 9308	MT-GLAZE 68K JA 1/10W	1	
R652	401 038 7809	MT-GLAZE 56K JA 1/10W	1	
R653	401 037 9309	MT-GLAZE 18K JA 1/10W	1	
R654	401 037 6704	MT-GLAZE 1.2K JA 1/10W	1	
R655	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R656	401 038 3603	MT-GLAZE 3.3K JA 1/10W	1	
R657	401 038 2309	MT-GLAZE 270K JA 1/10W	1	
R658	401 038 7908	MT-GLAZE 560K JA 1/10W	1	
R659	401 037 8005	MT-GLAZE 15K JA 1/10W	1	
R660	401 038 2309	MT-GLAZE 270K JA 1/10W	1	
R661	401 038 7908	MT-GLAZE 560K JA 1/10W	1	
R662	401 038 7908	MT-GLAZE 560K JA 1/10W	1	
R663	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R664	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R665	401 038 0701	MT-GLAZE 2.2K JA 1/10W	1	
R666	401 038 0701	MT-GLAZE 2.2K JA 1/10W	1	
R667	401 038 3801	MT-GLAZE 330K JA 1/10W	1	
R668	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R669	401 037 9002	MT-GLAZE 18 JA 1/10W	1	
R670	401 037 7800	MT-GLAZE 150 JA 1/10W	1	
R671	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R672	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R673	401 037 5806	MT-GLAZE 1M JA 1/10W	1	
R674	401 038 3603	MT-GLAZE 3.3K JA 1/10W	1	
R675	401 038 5102	MT-GLAZE 3.9K JA 1/10W	1	
R676	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R677	401 037 5806	MT-GLAZE 1M JA 1/10W	1	
R678	401 038 6604	MT-GLAZE 470K JA 1/10W	1	
R679	401 038 0602	MT-GLAZE 220 JA 1/10W	1	
R680	401 038 0800	MT-GLAZE 22K JA 1/10W	1	
R681	401 038 6406	MT-GLAZE 4.7K JA 1/10W	1	
R682	401 038 6406	MT-GLAZE 4.7K JA 1/10W	1	
R683	401 037 8005	MT-GLAZE 15K JA 1/10W	1	
R684	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R685	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R686	401 038 6307	MT-GLAZE 470 JA 1/10W	1	
R687	401 038 0701	MT-GLAZE 2.2K JA 1/10W	1	
R688	401 038 5102	MT-GLAZE 3.9K JA 1/10W	1	
R690	401 038 9209	MT-GLAZE 6.8K JA 1/10W	1	
R702-705	401 038 3702	MT-GLAZE 33K JA 1/10W	4	
R706	401 038 2200	MT-GLAZE 27K JA 1/10W	1	
R707	401 038 2200	MT-GLAZE 27K JA 1/10W	1	

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
R708	401 038 6406	MT-GLAZE 4.7K JA 1/10W	1	
R709	401 038 9209	MT-GLAZE 6.8K JA 1/10W	1	
R710	401 038 7700	MT-GLAZE 5.6K JA 1/10W	1	
R711	401 038 0602	MT-GLAZE 220 JA 1/10W	1.	
R712	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R713	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R714	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R715-718	401 038 3702	MT-GLAZE 33K JA 1/10W	4	
R719	401 038 2200	MT-GLAZE 27K JA 1/10W	1	
R720	401 038 2200	MT-GLAZE 27K JA 1/10W	1	
R721	401 038 6406	MT-GLAZE 4.7K JA 1/10W	1	
R722	401 038 9209	MT-GLAZE 6.8K JA 1/10W	1	
R723	401 038 7700	MT-GLAZE 5.6K JA 1/10W	1	
R724	401 038 0602	MT-GLAZE 220 JA 1/10W	1	
R725	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R726	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R727	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R730	401 038 0800	MT-GLAZE 22K JA 1/10W	1	
R752	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R755	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R800	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R802	401 035 6805	MT-GLAZE 1.2K JA 1/8W	1	
R803	401 036 9904	MT-GLAZE 560 JA 1/8W	1	
R804	401 035 6805	MT-GLAZE 1.2K JA 1/8W	1	
R805	401 038 0800	MT-GLAZE 22K JA 1/10W	1	
R807	401 038 0800	MT-GLAZE 22K JA 1/10W	1	
R808	401 038 0800	MT-GLAZE 22K JA 1/10W	1	
R810	401 038 0800	MT-GLAZE 22K JA 1/10W	1	
R811	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R812	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R813	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R815	401 038 9209	MT-GLAZE 6.8K JA 1/10W	1	
R822	401 038 2101	MT-GLAZE 2.7K JA 1/10W	1	
R823	401 038 6406	MT-GLAZE 4.7K JA 1/10W	1	
R832	401 035 6805	MT-GLAZE 1.2K JA 1/8W	1	
R834	401 035 6805	MT-GLAZE 1.2K JA 1/8W	1	
R840	401 038 0800	MT-GLAZE 22K JA 1/10W	1	
R841	401 036 1700	MT-GLAZE 22K JA 1/8W	1	
R843	401 038 0800	MT-GLAZE 22K JA 1/10W	1	
R845	401 037 5707	MT-GLAZE 100K JA 1/10W	1	
R846	401 039 0403	MT-GLAZE 8.2K JA 1/10W	1	
R850	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R851	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R902	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R903	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R905	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R907	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R910	401 037 1907	MT-GLAZE 680 JA 1/8W	1	
R911	401 036 4701	MT-GLAZE 330 JA 1/8W	1	
R912	401 036 4701	MT-GLAZE 330 JA 1/8W	1	
R920	401 036 8501	MT-GLAZE 47K JA 1/8W	1	
R921	401 035 5402	MT-GLAZE 100K JA 1/8W	1	
R922	401 035 5402	MT-GLAZE 100K JA 1/8W	1	
R930	401 036 4701	MT-GLAZE 330 JA 1/8W	1	
R931	401 035 5402	MT-GLAZE 100K JA 1/8W	1	
R932	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R940	401 036 1403	MT-GLAZE 220 JA 1/8W	1	
R941	401 036 1403	MT-GLAZE 220 JA 1/8W	1	
R942	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
	401 035 4108	MT-GLAZE 0.000 ZA 1/8W	1	
JP100-103	401 035 4108	MT-GLAZE 0.000 ZA 1/8W	4	
		CAPACITORS		
C501	404 038 7909	CERAMIC 2200P M 50V	1	
C503	403 044 1802	ELECT 470U M 16V	1	

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
C505-508	403 041 9603	ELECT 10U M 16V	4	
C550	403 023 4404	CERAMIC 330P J 50V	1	
C551	403 043 7102	ELECT 330U M 16V	1	
C552	403 041 5704	ELECT 470U M 10V	1	
C553	403 069 5601	CERAMIC 0.01U K 50V	1	
C601	403 068 2007	CERAMIC 0.022U K 25V	1	
C602	403 039 2708	ELECT 47U M 6.3V	1	
C603	403 038 2105	ELECT 100U M 6.3V	1	
C604	403 039 6102	ELECT 10U M 10V	1	
C605	403 039 6102	ELECT 10U M 10V	1	
C606	403 069 5601	CERAMIC 0.01U K 50V	1	
C607	403 069 5601	CERAMIC 0.01U K 50V	1	
C608	403 009 5708	CERAMIC 100P J 50V	1	
C609	403 009 5708	CERAMIC 100P J 50V	1	
C610	403 069 5601	CERAMIC 0.01U K 50V	1	
C611	403 069 1702	CERAMIC 1000P K 50V	1	
C612	403 215 3000	CERAMIC 0.082U K 25V	1	
C613	403 198 2007	CERAMIC 0.1U K 16V	1	
C614	403 198 2007	CERAMIC 0.1U K 16V	1	
C615	403 184 4909	NP-ELECT 0.47U M 50V	1	
C616	403 198 2007	CERAMIC 0.1U K 16V	1	
C617	403 009 5708	CERAMIC 100P J 50V	1	
C618	403 051 1505	ELECT 4.7U M 50V	1	
C619	403 070 8806	CERAMIC 1500P K 50V	1	
C620	403 030 6903	CERAMIC 68P J 50V	1	
C621	403 030 6903	CERAMIC 68P J 50V	1	
C622	403 198 2007	CERAMIC 0.1U K 16V	1	
C623	403 071 8102	CERAMIC 2200P K 50V	1	
C624	403 069 1702	CERAMIC 1000P K 50V	1	
C625	403 072 5902	CERAMIC 0.027U K 50V	1	
C626	403 024 2102	CERAMIC 39P J 50V	1	
C627	403 039 6102	ELECT 10U M 10V	1	
C628	403 049 1005	ELECT 1U M 50V	1	
C629	403 049 1005	ELECT 1U M 50V	1	
C630	403 038 2105	ELECT 100U M 6.3V	1	
C631	403 026 7501	CERAMIC 470P J 50V	1	
C632-634	403 198 2007	CERAMIC 0.1U K 16V	3	
C635	403 018 0503	CERAMIC 22P J 50V	1	
C636	403 069 5601	CERAMIC 0.01U K 50V	1	
C637	403 069 5601	CERAMIC 0.01U K 50V	1	
C638	403 069 1702	CERAMIC 1000P K 50V	1	
C639	403 069 5601	CERAMIC 0.01U K 50V	1	
C640	403 069 5601	CERAMIC 0.01U K 50V	1	
C641	403 070 8806	CERAMIC 1500P K 50V	1	
C642	403 166 1704	NP-ELECT 1U M 50V	1	
C643	403 038 2105	ELECT 100U M 6.3V	1	
C644	403 194 9505	NP-ELECT 2.2U M 50V	1	
C646	403 041 2802	ELECT 47U M 10V	1	
C647	403 040 2308	ELECT 22U M 10V	1	
C648	403 068 2007	CERAMIC 0.022U K 25V	1	
C649	403 039 6102	ELECT 10U M 10V	1	
C650	403 069 5601	CERAMIC 0.01U K 50V	1	
C651	403 130 3604	CERAMIC 0.047U K 25V	1	
C652	403 198 2007	CERAMIC 0.1U K 16V	1	
C653	403 198 2007	CERAMIC 0.1U K 16V	1	
C654	403 051 1505	ELECT 4.7U M 50V	1	
C655	403 038 2105	ELECT 100U M 6.3V	1	
C656	403 038 2105	ELECT 100U M 6.3V	1	
C657	403 051 1505	ELECT 4.7U M 50V	1	
C658	403 130 4106	CERAMIC 0.068U K 25V	1	
C659	403 130 4106	CERAMIC 0.068U K 25V	1	
C660	403 198 2007	CERAMIC 0.1U K 16V	1	
C661	403 039 2708	ELECT 47U M 6.3V	1	
C662	403 198 2007	CERAMIC 0.1U K 16V	1	
C663	403 009 5708	CERAMIC 100P J 50V	1	
C670	403 014 3409	CERAMIC 18P J 50V	1	
C679	403 069 5601	CERAMIC 0.01U K 50V	1	

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
C680	403 166 1704	NP-ELECT 1U M 50V	1	
C681	403 198 2007	CERAMIC 0.1U K 16V	1	
C682	403 198 2007	CERAMIC 0.1U K 16V	1	
C683	403 069 5601	CERAMIC 0.01U K 50V	1	
C700	403 018 0503	CERAMIC 22P J 50V	1	
C701	403 018 0503	CERAMIC 22P J 50V	1	
C702	403 198 2007	CERAMIC 0.1U K 16V	1	
C703	403 198 2007	CERAMIC 0.1U K 16V	1	
C704	403 069 1702	CERAMIC 1000P K 50V	1	
C705	403 022 8205	CERAMIC 33P J 50V	1	
C706	403 009 5708	CERAMIC 100P J 50V	1	
C707	403 009 5708	CERAMIC 100P J 50V	1	
C708	403 071 8102	CERAMIC 2200P K 50V	1	
C709	403 018 7403	CERAMIC 220P J 50V	1	
C710	403 041 9603	ELECT 10U M 16V	1	
C711	403 039 2708	ELECT 47U M 6.3V	1	
C712	403 022 8205	CERAMIC 33P J 50V	1	
C713	403 009 5708	CERAMIC 100P J 50V	1	
C714	403 009 5708	CERAMIC 100P J 50V	1	
C715	403 071 8102	CERAMIC 2200P K 50V	1	
C716	403 018 7403	CERAMIC 220P J 50V	1	
C717	403 041 9603	ELECT 10U M 16V	1	
C718	403 039 2708	ELECT 47U M 6.3V	1	
C730	403 039 2708	ELECT 47U M 6.3V	1	
C731	403 069 5601	CERAMIC 0.01U K 50V	1	
C732	403 093 8104	OS-SOLID 4.7U M 10V	1	
C755	403 039 2708	ELECT 47U M 6.3V	1	
C803	403 185 8708	CERAMIC 1U Z 16V	1	
C810	403 130 4106	CERAMIC 0.068U K 25V	1	
C820	403 150 3004	DL-ELECT 0.047F Z 5.5V	1	
C821	403 198 2007	CERAMIC 0.1U K 16V	1	
C822	403 198 2007	CERAMIC 0.1U K 16V	1	
C901	403 069 5601	CERAMIC 0.01U K 50V	1	
C920	403 069 1702	CERAMIC 1000P K 50V	1	
C930	403 069 1702	CERAMIC 1000P K 50V	1	
C951	403 042 8407	ELECT 22U M 16V	1	
C952	403 069 5601	CERAMIC 0.01U K 50V	1	
C953	403 069 5601	CERAMIC 0.01U K 50V	1	
C954	403 198 2007	CERAMIC 0.1U K 16V	1	
C955	403 198 2007	CERAMIC 0.1U K 16V	1	
		MISCELLANEOUS		
CS501	632 616 2439	CORD,3P-60MM	1	
CS502	632 616 2446	CORD,8P-60MM	1	
CS510	632 587 5729	SOCKET,DIN	1	
CS610	632 616 2347	CORD,6P-50MM	1	
CS901	632 575 1108	CORD,4P-80MM	1	
CS904	632 613 9493	HOUSING,7P	1	
CS905	632 624 1479	CORD,7P-60MM	1	
CP501	632 254 0088	PLUG, 3P	1	
CP502	632 254 0132	PLUG, 8P	1	
CP601	632 254 0118	PLUG, 6P	1	
CP602	632 254 0132	PLUG, 8P	1	
CP610	632 254 0118	PLUG, 6P	1	
CP901	632 254 0095	PLUG, 4P	1	
CP902	632 254 0071	PLUG, 2P	1	
CP905	632 254 0026	PLUG, 7P	1	
CP910	632 253 5794	PLUG, 2P	1	
Z801	632 564 0280	BATTERY,CR2032-1HF	1	
FC904	632 610 8567	WIRE,7P-158MM	1	
SW801	632 257 0153	KEY SWITCH, RESET	1	
SW802	632 572 8490	SWITCH,SLIDE,2P-2T	1	
SW901	632 258 7472	KEY SWITCH, EJECT	1	
SW930	632 579 4655	SWITCH,PUSH	1	
F51	423 007 2301	FUSE 125V 5A	1	
	632 633 6793	CORD,B.UP	1	
	632 256 8020	CORD,1070MM,GND	1	

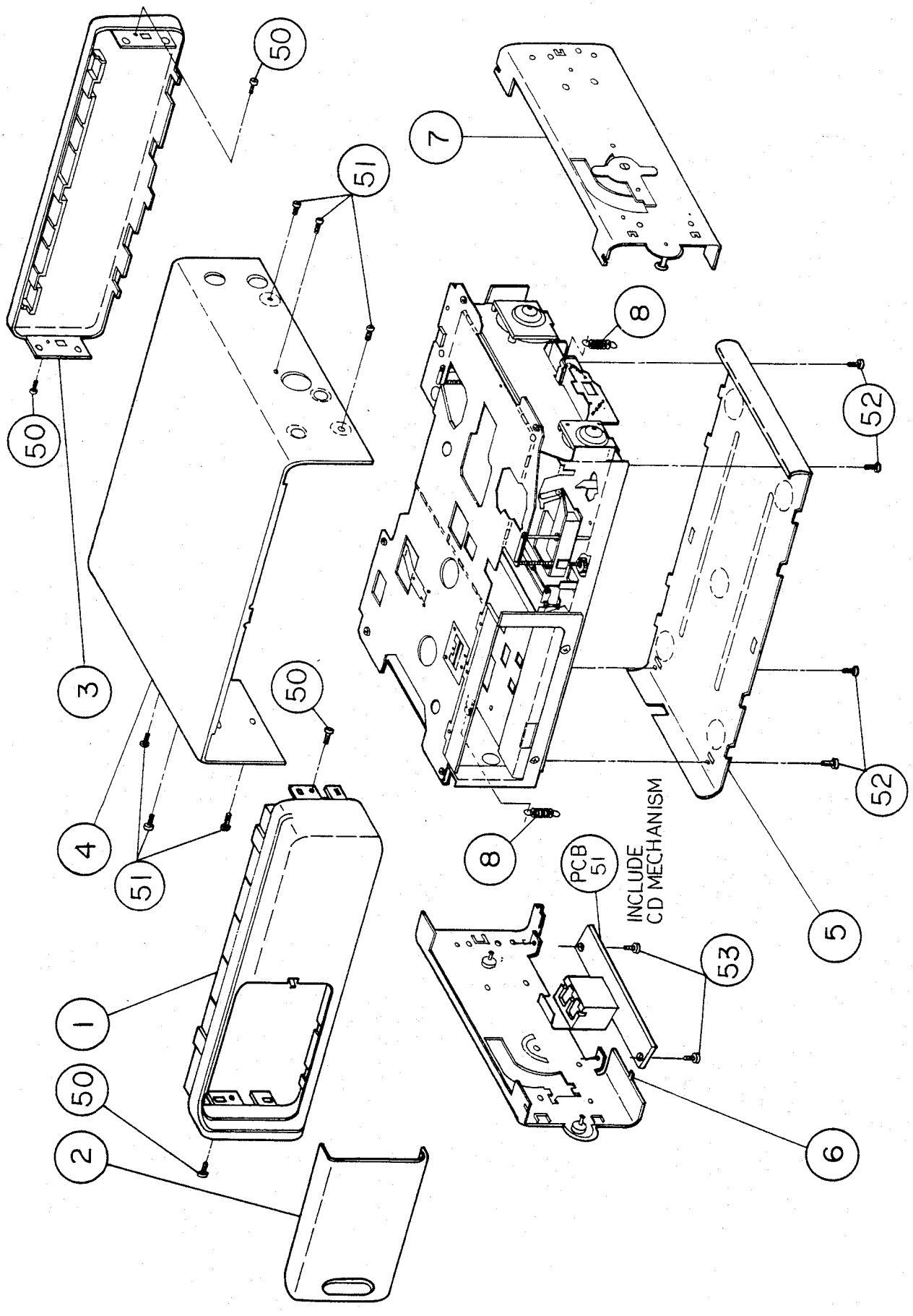
COMMANDER

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
		SEMICONDUCTORS		
D551	407 004 0607	DIODE DCB010	1	
D552	407 008 4809	DIODE LFB01	1	
IC551	410 143 4504	IC TMP47C421AF-V311	1	
IC552	410 061 9001	IC S-81250HG-RD-T2	1	
IC553	409 181 5703	IC S-8054HN-CB	1	
Q551	405 044 1509	TR 2SA1519	1	
Q552	405 078 8703	TR DTA114TK	1	
	405 088 6300	TR UN2115 } or		
Q553	405 000 3608	TR DTC114YK	1	
	405 035 2201	TR UN2214 } or		
		RESISTORS		
R551	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R552	401 036 8501	MT-GLAZE 47K JA 1/8W	1	
R553-555	401 038 6505	MT-GLAZE 47K JA 1/10W	3	
R556	401 036 8501	MT-GLAZE 47K JA 1/8W	1	
R557-563	401 038 6505	MT-GLAZE 47K JA 1/10W	7	
R564	401 038 9209	MT-GLAZE 6.8K JA 1/10W	1	
R565	401 035 9004	MT-GLAZE 18 JA 1/8W	1	
R566	401 035 9004	MT-GLAZE 18 JA 1/8W	1	
R567	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R568	401 038 5300	MT-GLAZE 39K JA 1/10W	1	
R569	401 036 8501	MT-GLAZE 47K JA 1/8W	1	
R570	401 035 4306	MT-GLAZE 10 JA 1/8W	1	
R571	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	12	
	401 035 4108	MT-GLAZE 0.000 ZA 1/8W	26	
		CAPACITORS		
C551	403 041 2802	ELECT 47U M 10V	1	
C552	403 067 9809	CERAMIC 0.1U K 25V	1	
C553	403 192 5905	CERAMIC 0.1U K 25V	1	
C554	403 130 3604	CERAMIC 0.047U K 25V	1	
C555	403 130 3604	CERAMIC 0.047U K 25V	1	
C556	403 022 2609	CERAMIC 30P J 50V	1	
C557	403 022 2609	CERAMIC 30P J 50V	1	
		MISCELLANEOUS		
S551-561	632 611 3998	SWITCH,TACT,1P-1T	11	
PL551	632 516 5806	PILOT LAMP, 5V 60MA	1	
PL552	632 516 5806	PILOT LAMP, 5V 60MA	1	
X551	632 616 4907	RESONATOR,CERAM,3.580MHZ	1	
	632 616 6758	CORD,1600MM	1	

AUDIO INTERFACE

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
		SEMICONDUCTORS		
D52	407 071 8902	ZENER DIODE DZD9.1Y	1	
IC51	409 262 4205	IC BA3121F	1	
Q51	405 000 3608	TR DTC114YK } or	1	
	405 035 2201	TR UN2214	1	
Q52	405 044 1509	TR 2SA1519	1	
Q53	405 000 3608	TR DTC114YK } or	1	
	405 035 2201	TR UN2214		
Q54	405 022 6205	TR 2SD1621-S } or	1	
	405 022 6304	TR 2SD1621-T		
Q55	405 083 5100	TR DTC314TK	1	
Q56	405 029 3009	TR DTA114YK-T97 } or	1	
	405 035 2102	TR UN2114		
Q155	405 083 5100	TR DTC314TK	1	
		RESISTORS		
R50	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R51	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R52	401 036 4800	MT-GLAZE 3.3K JA 1/8W	1	
R55,56	401 035 4306	MT-GLAZE 10 JA 1/8W	2	
R57	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R58	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R59	401 038 3702	MT-GLAZE 33K JA 1/10W	1	
R60	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
R158	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R159	401 038 3702	MT-GLAZE 33K JA 1/10W	1	
R160	401 037 5400	MT-GLAZE 1K JA 1/10W	1	
	401 035 4108	MT-GLAZE 0.000 ZA 1/8W	1	
	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	15	
		CAPACITORS		
C50	403 068 2007	CERAMIC 0.022U K 25V	1	
C51	403 046 9905	ELECT 4.7U M 25V	1	
C53	403 041 8804	ELECT 10U M 16V	1	
C54	403 042 7707	ELECT 22U M 16V	1	
C55,56	403 046 9905	ELECT 4.7U M 25V	2	
C57	403 042 7707	ELECT 22U M 16V	1	
C58	403 049 0008	ELECT 1U M 50V	1	
C155	403 046 9905	ELECT 4.7U M 25V	1	
C156	403 046 9905	ELECT 4.7U M 25V	1	
		MISCELLANEOUS		
SW101	632 548 0114	SWITCH,SLIDE,1P-2T	1	
F1	423 005 8305	FUSE 125V 2A	1	
CS51	632 587 5729	SOCKET,DIN	1	
CS52	632 617 4265	SOCKET,DIN	1	
	632 619 9183	CORD,800MM,RCA	1	
	632 598 3738	CORD,ACC	1	
	632 627 7904	CORD,650MM,REMOTE	1	

CABINET EXPLODED VIEW

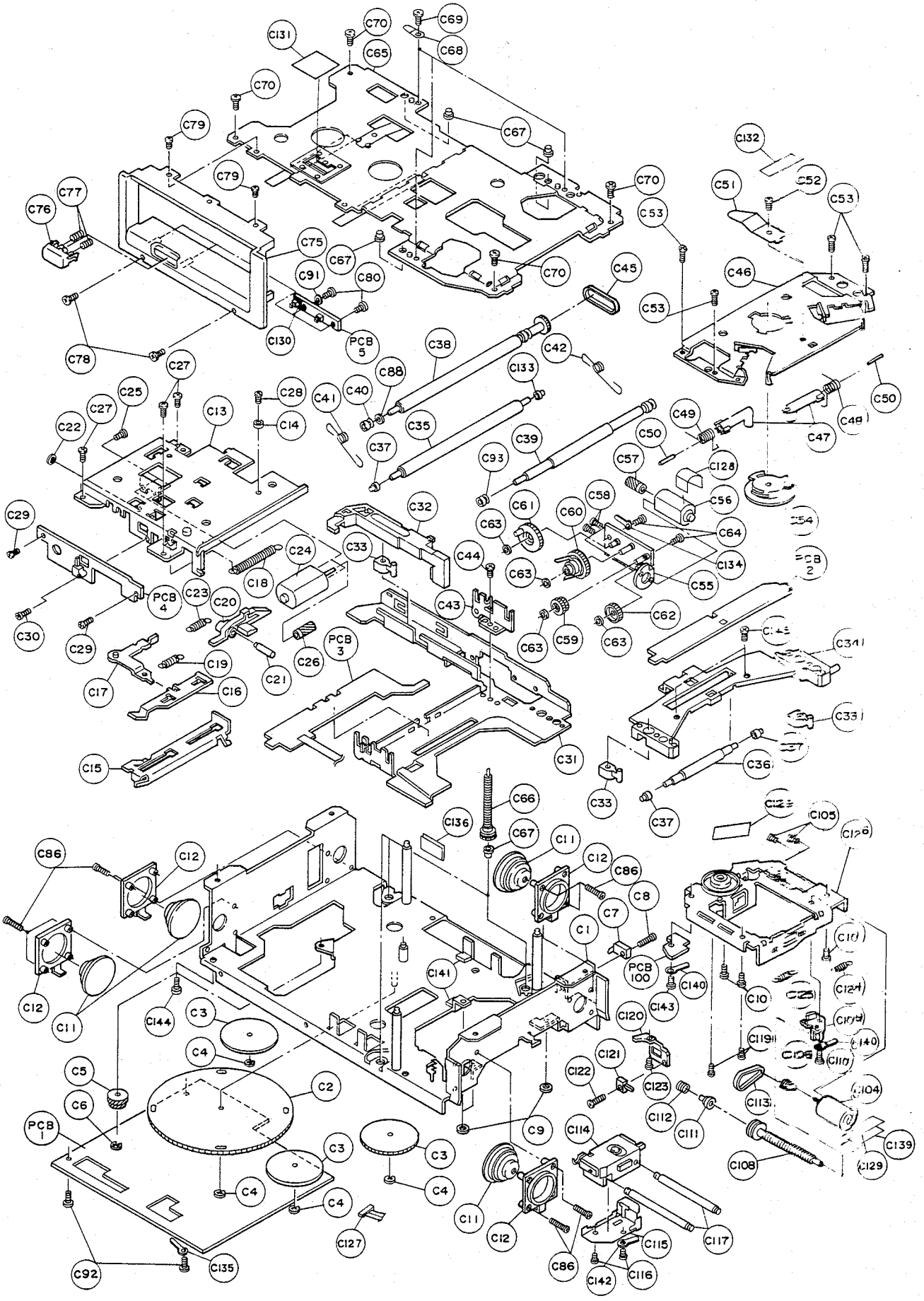


CABINET PARTS LIST

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
		INDIVIDUAL		
	632 658 1001	INNER CARTON	1	
	632 644 1176	PAD,TOP	1	
	632 644 1183	PAD,BOTTOM	1	
	632 297 9611	POLYETHYLENE BAG	1	
		ACCESSORY		
	632 623 1609	INSTRUCTION MANUAL	1	
	632 623 1777	INSTRUCTION MANUAL	1	
	632 569 4245	CARD,WARRANTY	1	
	632 298 1881	POLYETHYLENE BAG	1	
	632 633 8858	CARD,WARRANTY	1	
	632 618 5162	ACCESSORY PART,BRACKET, SET	2	
	632 644 8502	ACCESSORY PART,BRACKET, BRACKET - CAR	2	
	632 580 1476	ADHESIVE SHEET	2	
	632 298 1706	POLYETHYLENE BAG	2	
	632 613 4122	SHEET,CABINET	1	
	632 636 4321	ASSY,ACCESSORY PART	1	
	632 636 7865	POLY COVER,120X120	(1)	
	411 153 1408	BOLT HEX+W 5X8, SET- BRACKET	(4)	
	411 137 1202	BOLT HEX+SW+W 6X20, BRACKET - CAR	(4)	
	411 137 1301	NUT HEX+CON-SW 6, BRACKET - CAR	(4)	
	411 073 8303	SCR TPG1PAN 5X12, BRACKET - CAR	(4)	
	411 137 1004	WASHER SPR 5, BRACKET - CAR	(4)	
	411 094 1000	WASHER Z 5X12X0.8, BRACKET - CAR	(4)	
	411 070 3905	SCR TPG BIN 3X12	(2)	
	632 633 8834	LABEL,CORD,CONSTANT	1	
	632 567 0843	LABEL,CORD,GROUND	1	
	632 614 1588	CORD,DIN,5000MM	1	
	632 636 3805	CORD,DIN,5000MM } or		
	632 633 6748	CORD,5000MM,POWER	1	
	632 298 2376	POLYETHYLENE BAG	1	
	632 618 5186	SPECIAL SCREW,SHIPPING	3	
	632 618 5223	LABEL,CAUTION, SHIPPING ADVICE	1	
	632 634 0943	VEIL,BLACK	1	
	632 623 2125	ASSY,MAGAZINE	1	
	632 625 4080	LABEL	1	
	632 579 7243	POLY COVER,200X200, MAGAZINE	1	
	632 569 4405	CORD,MINI JACK	1	
	632 631 7655	CORD,300MM,RCA CORD	1	
	632 567 0881	LABEL,CORD	1	
	632 633 8841	LABEL,CORD	1	
	632 634 5153	LABEL,CORD	1	
	632 634 5160	LABEL,CORD	1	
	632 637 4993	LABEL,CAUTION	1	

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
		CABINET		
1	632 623 2286	ASSY,PANEL,NOSE	1	
2	632 660 0276	DOOR	1	
3	632 623 3917	ASSY,PANEL,REAR	1	
4	632 653 6650	CABINET,TOP	1	
5	632 623 4129	ASSY,LID,BOTTOM	1	
6	632 653 6674	ASSY,BRACKET-E,MECHA.,L	1	
7	632 653 6681	ASSY,BRACKET-E,MECHA.,R	1	
8	632 603 1698	SPRING,TENS	2	
50	411 027 5303	SCR S-TPG FLT 2.6X5, NOSE/REAR PANEL	4	
51	411 137 5002	SCR S-TPG BIN 2.6X5	6	
52	411 137 5002	SCR S-TPG BIN 2.6X5	4	
53	411 027 1503	SCR S-TPG BIN 2.6X5, CONNECT PCB	2	
	632 624 2902	CUSHION	2	
	632 580 5450	SHEET	6	
	632 550 8481	LABEL,IDENTIFICATION,LASE FDA	1	
	632 550 8603	LABEL,CAUTION,LASER,FDA	1	
	632 550 8535	LABEL,IDENTIFICATION,CLAS FDA	1	
	632 625 5209	LABEL,CHANGER SW	1	
	632 625 5346	LABEL,CHANGER ID,1	1	
	632 634 5177	LABEL,CAUTION	1	
	632 637 4979	LABEL,RESET	1	
	632 636 6912	LABEL,CAUTION BOTTOM LID	1	
	632 645 0987	LABEL,SERVICE	1	

MECHANISM EXPLODED VIEW



MECHANISM PARTS LIST

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
C1	632 649 1928	ASSY,CHASSIS,BASE	1	
C2	632 602 3969	GEAR,ELEVATOR,A	1	
C3	632 602 3990	GEAR,ELEVATOR,B	3	
C4	411 101 0705	RING E 2	4	
C5	632 602 4621	WHEEL,WORM,ELEVATOR	1	
C6	411 101 0606	RING E 1.5	1	
C7(SW903)	632 621 8778	SWITCH,LEAF	1	
C8	411 132 2709	SCR S-TPG PAN PCS 1.7X7	1	
C9	632 604 6906	SPACER	3	
C10	411 028 2905	SCR S-TPG PAN 2X4	3	
C11	632 613 1275	DAMPER	4	
C12	632 602 3907	CLAMP,DAMPER	4	
C13	632 613 2753	ASSY,CHASSIS,MAGAZINE	1	
C14	632 611 8054	SLEEVE	1	
C15	632 603 2381	LEVER,EJECT,A	1	
C16	632 603 2374	LEVER,EJECT,B	1	
C17	632 603 2398	LEVER,EJECT,C	1	
C18	632 603 2237	SPRING,TENS	1	
C19	632 603 2251	SPRING,TENS	1	
C20	632 602 3853	STOPPER,MAGAZINE	1	
C21	632 601 2789	SHAFT	1	
C22	411 101 0606	RING E 1.5	1	
C23	632 603 2244	SPRING,TENS	1	
C24	632 614 7313	MOTOR,9V DC1.3W	1	
C25	412 016 4703	SPECIAL SCREW	2	
C26	632 602 4638	WORM,ELEVATOR	1	
C27	411 028 5609	SCR S-TPG PAN 2.6X4	3	
C28	412 016 4406	SPECIAL SCREW	1	
C29	411 027 1008	SCR S-TPG BIN 2X3	2	
C30	411 132 2709	SCR S-TPG PAN PCS 1.7X7	1	
C31	632 603 2855	CHASSIS,ELEVATOR	1	
C32	632 602 4430	LEVER,DISK	1	
C33	632 602 3921	GUIDE	3	
C34	632 602 4485	PLATE,GUIDE,DISK	1	
C35	632 633 8889	ASSY,ROLLER	1	
C36	632 633 8896	ASSY,ROLLER	1	
C37	632 602 4270	SLEEVE	3	
C38	632 633 8902	ASSY,ROLLER	1	
C39	632 633 8919	ASSY,ROLLER	1	
C40	632 602 4300	SLEEVE	1	
C41	632 603 2299	SPRING,TORS	1	
C42	632 603 2282	SPRING,TORS	1	
C43	632 603 2350	BRACKET-M,ROLLER	1	
C44	412 016 4406	SPECIAL SCREW	1	
C45	632 603 0745	BELT,SQUARE	1	
C46	632 603 2831	CHASSIS,CLAMP	1	
C47	632 602 4256	STOPPER,DISK	2	
C48	632 603 2312	SPRING,TORS	1	
C49	632 603 2305	SPRING,TORS	1	
C50	411 057 6509	PIN PARALLEL 1.5X9	2	
C51	632 603 1650	SPRING,PLATE	1	
C52	412 016 4703	SPECIAL SCREW	1	
C53	411 028 2509	SCR S-TPG PAN 2X14	4	
C54	632 602 4416	FLANGE	1	
C55	632 613 2760	ASSY,BRACKET-E,MOTOR	1	
C56	632 614 7252	MOTOR,10V DC1W	1	
C57	632 602 4607	WORM,ROLLER	1	
C58	412 016 4703	SPECIAL SCREW	2	
C59	632 602 4614	WHEEL,WORM,ROLLER	1	
C60	632 613 2777	ASSY,GEAR,CLUTCH	1	
C61	632 602 4126	GEAR,CHANGE	1	
C62	632 602 4164	GEAR,ROLLER	1	
C63	632 307 6371	SPECIAL WASHER	4	

TROUBLE SHOOTING

How to Remove the Magazine in Case of E01 Display

If the CD changer was brought in by a customer because of an "E01" display, then the magazine and the disk should be removed in the following procedure.

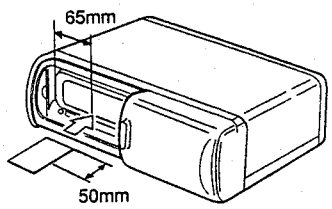


Figure 1

Insert a business card between the magazine and the mechanism. (Figure 1)
The magazine lock lever will disengage to allow the magazine out.

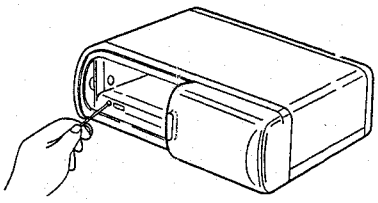


Figure 2

Press the reset button after connecting backup (yellow lead) and GND (black lead) switches. (Figure 2)
The disk remaining on the turntable will come out from the magazine inlet.

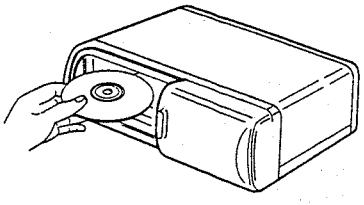
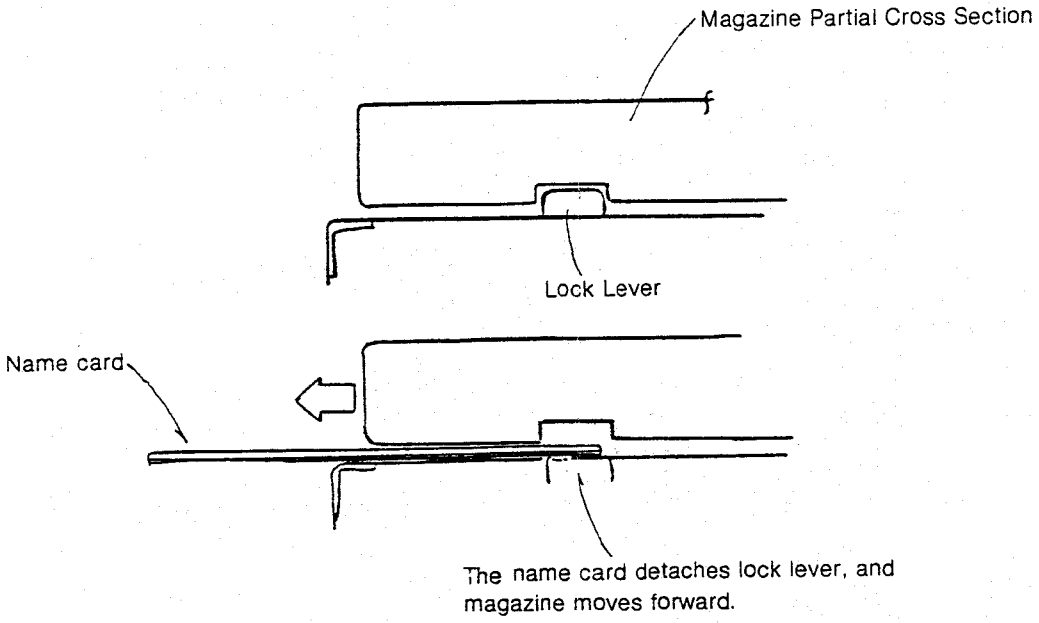


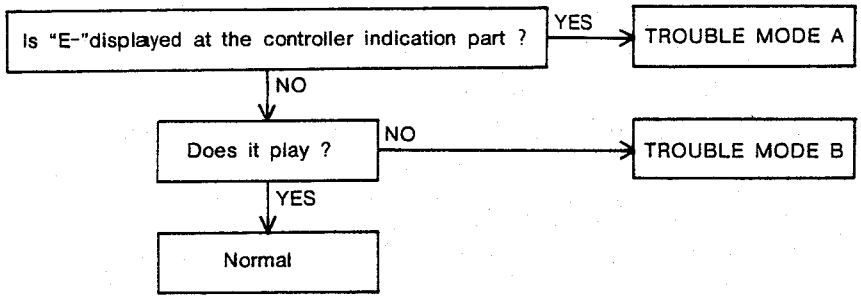
Figure 3

Remove this disk from the magazine inlet. (Figure 3)

Reference Information
Emergency Eject Principle



TROUBLE CHECKING FLOW CHART



1. TROUBLE MODE A

"E" displayed by mechanical trouble of changer Mechanism.

E-01·····Mechanism TROUBLE MESSAGE.

a) Disc change is not completed within 9 seconds.
- D910, 911, 912, and Q910, 911, 912 detective.
- Magazine detective.
- Mechanism detective.

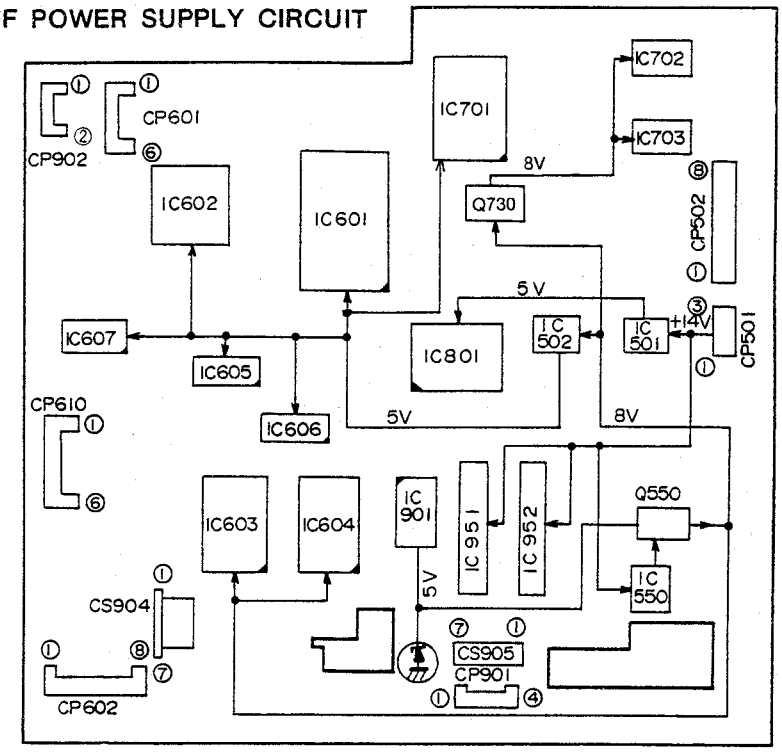
b) Limit SW is not ON.
- Limit SW detective.
- Feed Motor Mechanism detective.

E-30·····Temperature Trouble Message.
- The temperature inside the player goes above its reference temperature.
- Cool off the inside of the car, try to play again.

TROUBLE MODE B

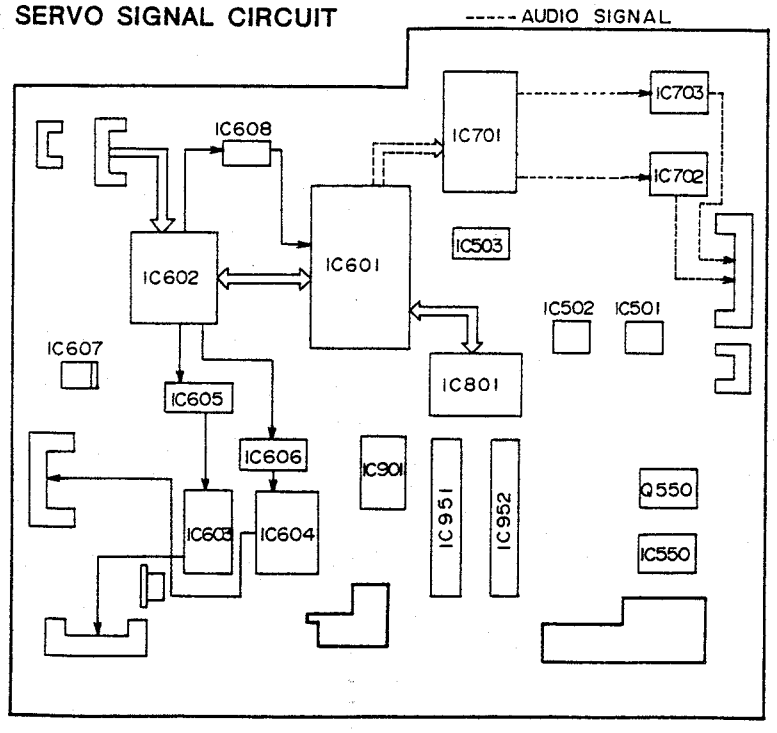
SYMPTOM	DEFECTIVE CIRCUIT	DEFECTIVE POINT
Disc Turning inferiority	FEED Motor Circuit	• Check limit SW and CS610 5pin • Check voltage of IC601 57, 58pin • Check IC604 • Check Feed Motor and Mechanism
	Focus Search Circuit	• Check Voltage of IC601 67, 68, 69pin • Check IC605 1pin • Check IC603 • Check CP602 5, 8pin • Check pickup
	APC	• Check Q601, short or open • Check IC607 1pin • Check pickup
	Disc Motor Circuit	• Check IC601 53pin and IC606 7pin • Check IC604 • Check Disc Motor and Mechanism
	Power Supply Circuit	• Check IC801 16pin, 40pin • Check Q801~806 • Check Q550, IC502
SEARCH inferiority	Tracking Servo Circuit	• Check voltage of TPTE and readjustment SVR601 • Check IC605 7pin, IC603 • Check Pickup • Check IC602 34, 35pin
	Kick pulse Circuit	• Check IC601 63, 64pin and IC602 11, 12pin
	Feed Motor Circuit	• Check R656 and IC606 1pin • Check Feed Motor and Mechanism
Noise	VCO Circuit	• Check frequency of TP VCO and readjust SVR602 • Check voltage of IC601 1, 2, 79, 80pin
	RF Circuit	• Check waveform of TP RF
	Mechanism	• Check eccentricity of Mechanism
	Audio Circuit	• Check IC601-IC701 data transmission • Check CP502 6, 7, 8pin

MAIN P.C.B. SOURCE OF POWER SUPPLY CIRCUIT



	CP501	CP502	CP601	CP602	CP610	CP901	CP902	CS904	CS905
①	B.up	ACC	GND	N.C.	DM+	RESET	CHACK SW	L.M.−	ELV.−
②	GND	B.up	A·C	MD	DM−	GND	GND	L.M.+	ELV.+
③	N.C.	CD+B	B·D	LD	FM−	EJECT		Sensor C	Disc NO.
④		BUS	F	GND	FM+	5V		Sensor A	+5V
⑤		BUS.G	E	F+	LIMIT			Sensor B	MAGA.SW
⑥		R-ch		T+	GND			GND	GND
⑦		GND		T−				+5V	
⑧		L-ch		F+					

MAIN P.C.B. AUDIO AND SERVO SIGNAL CIRCUIT



REF	IC NAME	POWER		SIGNAL	
		Pin No.	Voltage	INPUT	OUTPUT
IC501	μ-COM +5V POWER	2	14V	2	3
IC502	DIGITAL +5V POWER	1	8V	1	3
IC503	AUDIO +5V POWER	3	8V	3	1
IC550	DC/DC CONVERTER	6, 7	14V	6, 7	1, 8
IC601	DIGITAL SIGNAL PROCESSER	3, 33, 72	5	DATA BUS	
IC602	RF AMP/SERVO PROCESSER	21, 40	5	41, 42, 47, 48	7, 31
				DATA BUS	
IC603	FOCUS DRIVER		8V	9	5, 6
	TRACKING DRIVER			12	15, 16
IC604	FEED DRIVER		8V	9	5, 6
	DISC DRIVER			12	15, 16
IC605	FOCUS ERROR AMP	8	5V	3	1
	TRACKING ERROR AMP			5	7
IC606	FEED SERVO AMP	8	5V	2, 3	1
	DISC SERVO AMP			5, 6	7
IC607	APC	8	5V	3	1
	TEMPERATURE DETECTOR			6	7
IC608	RF AMP	5	5V	2	4
IC610	DSP RESET	2	5V	2	1
IC701	D/A CONVERTOR	16,17,21,22,26	5V	8,9,10	18,20,23,25
IC702	R-ch LPF	8	5V	2,3	7
IC703	L-ch LPF	8	5V	5, 6	1
IC801	MICRO PROCESSER	38, 39	5V	DATA BUS	
IC802	Battery Detector	2	5V	2	1
IC901	BUFFER SENSOR A	14	5V	1	2
	SENSOR B			3	4
	SENSOR C			13	12
	SENSOR DISC NO.			11	8
IC951	LOADING MOTOR DRIVER	7	14V	5, 6	2, 10
IC952	ELEVATOR MOTOR DRIVER	7	14V	5, 6	2, 10

FUNCTIONAL DESCRIPTION (SERVO CIRCUIT)

RF Summing Amplifier

The combined current from photodiodes A and C, (A+C), is input on FIV1(41pin), and the combined current from B and D, (B+D), on FIV2 (42pin). These signals are current-to-voltage converted and then input to the RF summing amplifier as shown in figures 1 and 2. The summing amplifier output, (A+C)+(B+D) on RFSM(36pin) is filtered externally to generate the HF (eye pattern) signal.

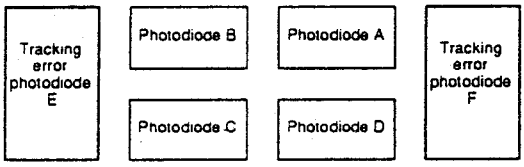


Figure 1. Photodiodes

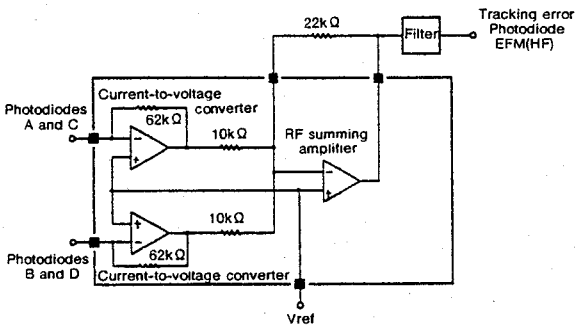


Figure 2. RF summing amplifier

Focusing

Focusing is started when pin FCS of the digital signal processor, the YM7121B for example, goes LOW and the objective lens is lowered. The lens is then raised gradually while FOCS(20pin) is HIGH. When the lens reaches the in-focus position and FEAO(31pin) is less than VR3-0.5V, $\overline{FZD}$(18pin) goes LOW. The FOCS(20pin) signal is reset and FSW(30pin) is open circuited. The focusing servocontroller then turns ON and if DRF(27pin) is HIGH, focusing servocontroller operation continues.

Focusing Servocontroller

Focusing is controlled by monitoring the difference in luminance received by the pickup photodiodes.

Focus error amplifier

The signals from the photodiode current-to-voltage converters are subtracted to provide a measure of the differential, or focus, error. The focus error amplifier output, is (B+D)−(A+C) on FEAO(31pin). A typical output is shown in figure 3.

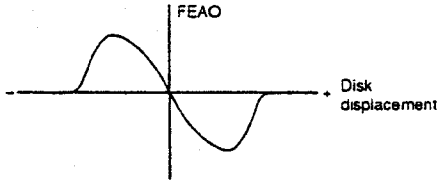


Figure 3. Focus error amplifier output

Focus detect RF comparator

The RF comparator output on DRF(27pin) goes HIGH when the peak RF summing amplifier input signal, (A+C)+(B+D), exceeds the reference voltage, VR1, as shown in figure 4.

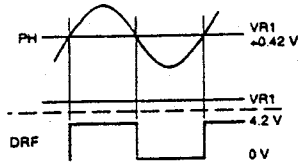


Figure 4. RF detector output

Focus zero-crossing comparator

This detects the zero-crossing points of the focus error amplifier output. The zero-crossing comparator output on $\overline{FZD}$ (18pin) goes HIGH when the focus error amplifier exceeds (V_{R3} − 0.5V) as shown in figure 5.

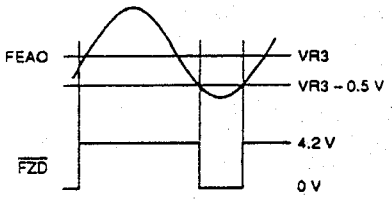


Figure 5. Zero-crossing comparator output

Focus switch

The focus switch is used to hold the focus lens at the reference position during startup. When FOCS(20pin) goes HIGH, FSW(30pin) is connected to VR3(4pin), temprarily overriding the focus error amplifier output as shown in figure 6.

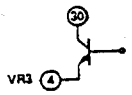


Figure 6. Focus switch

Tracking Servocontroller

The tracking servocontroller is applied to three beams — the main beam and two sub-beams — to maintain tracking accuracy as shown in figure 7.

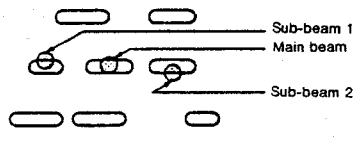


Figure 7. Tracking beams

The reflected light from sub-beams 1 and 2 is received by photodiodes E and F, respectively. When the tracking drifts laterally, the reflected light received from each beam is different. This differential is used to realign tracking.

Tracking error amplifier

The current from pickup photodiode E is input on E(47pin), and from photodiode F, on F(48pin). These signals are current-to-voltage converted and then input to the tracking error amplifier. The tracking error amplifier is a difference amplifier and its output, (F-E) on TEAO (2pin), is shown in figure 8.

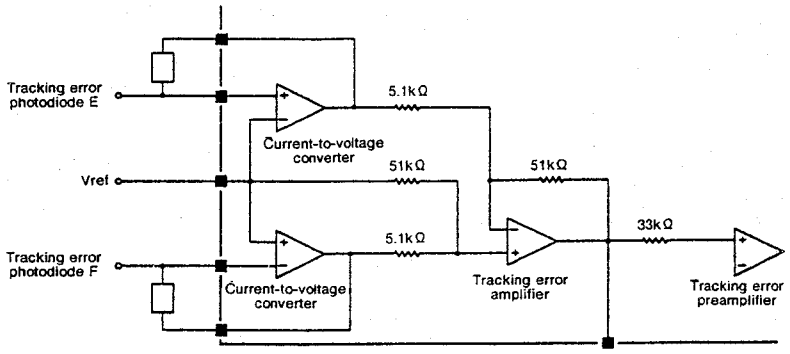


Figure 8. Tracking error amplifier

Tracking error preamplifier

This amplifier compensates the gain and phase responses of the tracking servocontroller loop.

Jump pulse amplifier

This amplifier is used to jump tracks when selecting a required track or when braking.

High-frequency level comparator

The comparator output on HFL(17pin) is used to detect the off-track condition. It is also used with the output on TES(16pin) to provide the digital signal processor, the YM7121B for example, with brake timing control information as shown in figure 9 and 10.

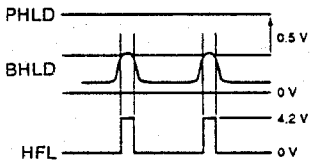
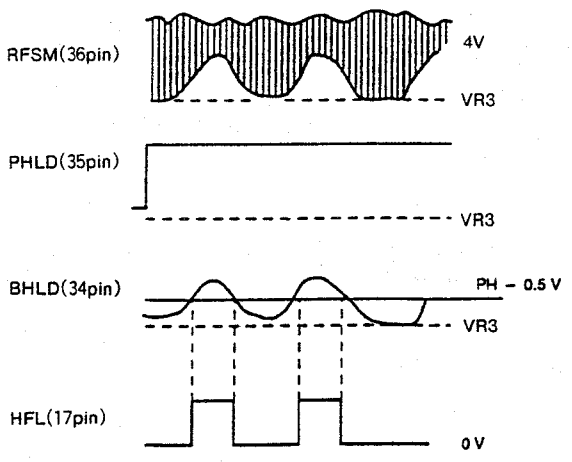


Figure 9. High-frequency level comparator signal

Tracking error slice comparator

This detects the zero crossing of the tracking error signal to provide the digital signal processor, the YM7121B for example, with the number of tracks crossed while in jump mode or the brake timing control information using the phase difference between HFL(17pin) and TES (16pin) as shown in figure 10.



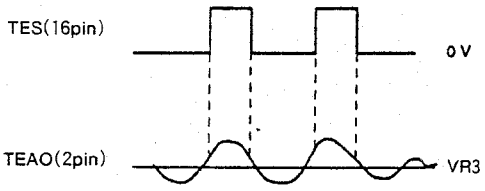


Figure 10. Tracking error signals

The tracking error slice comparator has a Schmitt-trigger input to eliminate incorrect operation caused by noise.

Servocontroller OFF switch

When TOFF (15pin) goes HIGH, TOFS (8pin) is connected to VR3 (4pin) turning OFF the tracking servocontroller as shown in figure 11.

Servocontroller gain control switch

When TGL(14pin) goes HIGH, THDS(9pin) is connected to VR3(4pin) through a 5.6k Ω resistor reducing the servocontroller loop gain as shown in figure 11.

Servocontroller hold control switch

When THLD (13pin) goes HIGH, THDS (9pin) is connected to VR3 (4pin) holding the servocontroller output voltage as shown in figure 11.

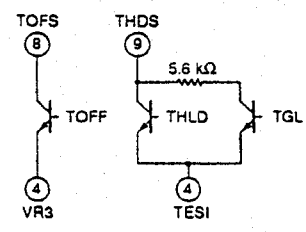
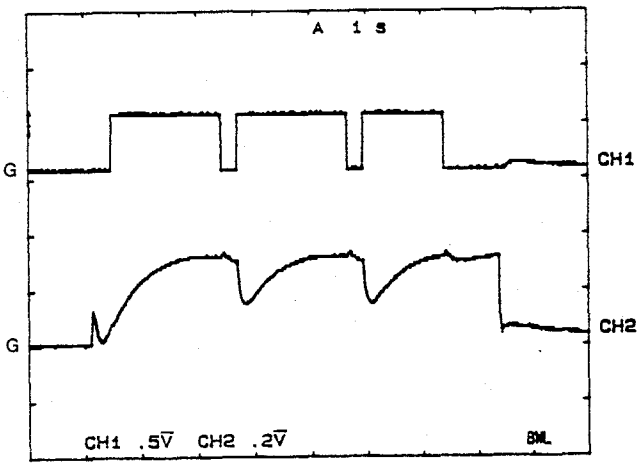


Figure 11. Control switches

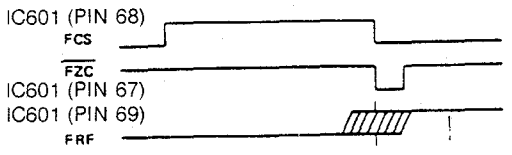
Note: Reference voltage
G: GND
VR: Pin 4 of IC602 (2.5V)

CH1: FCS (pin 68 of IC601) 5V/div
CH2: FO (pin 1 of IC605) 2V/div ls/div

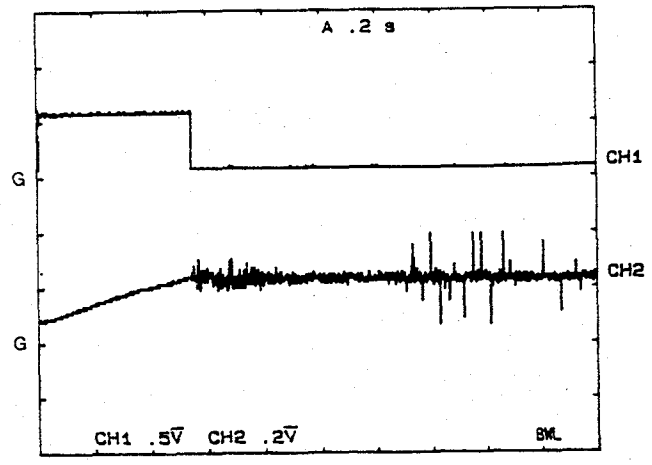
Mode: Focus Search is performed
(Disconnect CS601)



FOCUS SEARCH SIGNAL

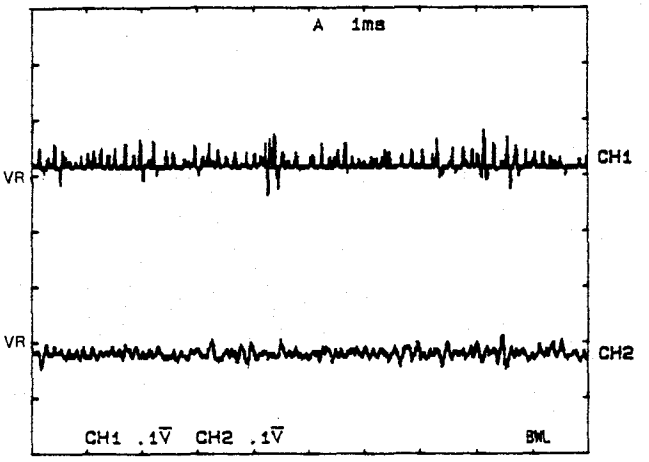


CH1: FCS (pin 68 of IC601) 5V/div
CH2: FO (pin 1 of IC605) 2V/div 0.2s/div
Mode: Focus close



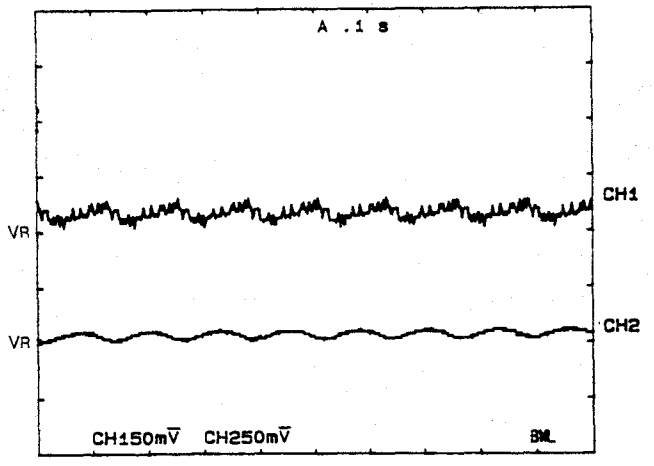
CH1: TO (pin 7 of IC605) 1V/div
CH2: FO (pin 1 of IC605) 1V/div
1ms/div

Mode: Play

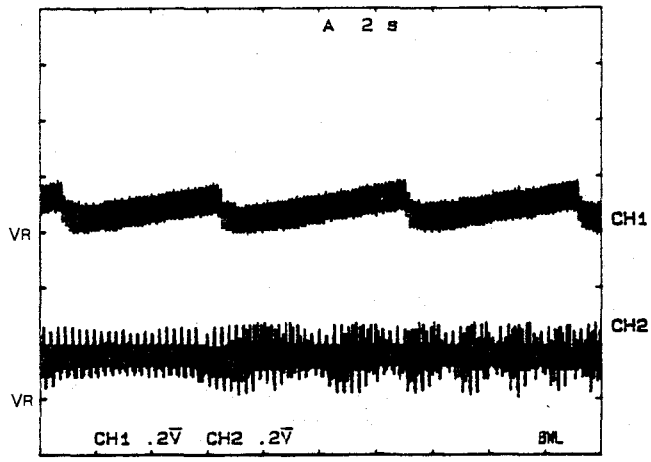


CH1: Disc Out (pin 7 of IC606) 0.5V/div
CH2: Feed Out (pin 1 of IC606) 0.5V/div
0.1s/div

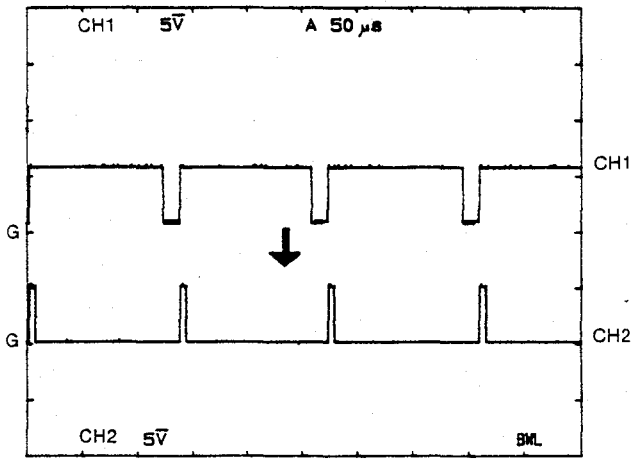
Mode: Play



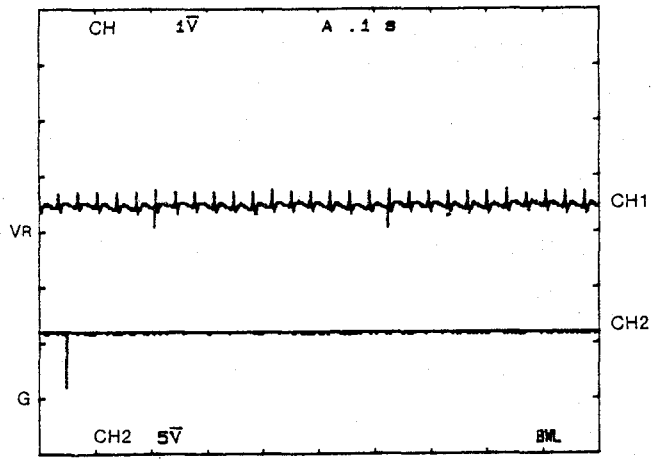
CH1: Disc Out (pin 7 of IC606) 2V/div
CH2: Feed Out (pin 1 of IC606) 2V/div
2s/div
Mode: Play



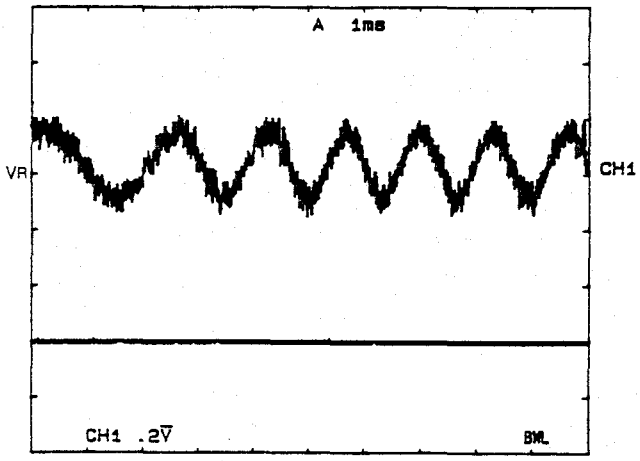
CH1: DM + (pin 53 of IC601) 5V/div
CH2: DM + (pin 53 of IC601) 5V/div
Mode: Disc Start → Play 50μs/div



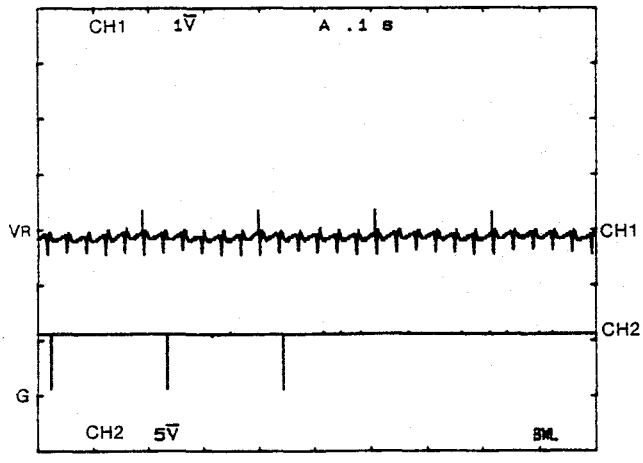
CH1: Feed Out (pin 1 of IC606) 1V/div
CH2: FEM + (pin 57 of IC601) 5V/div
0.1s/div
Mode: Forward Search



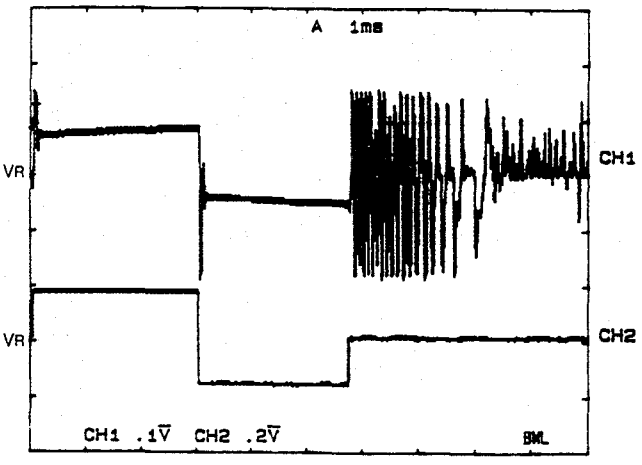
CH1: TO (pin 7 of IC605) 2V/div
1ms/div
Mode: Tracking open



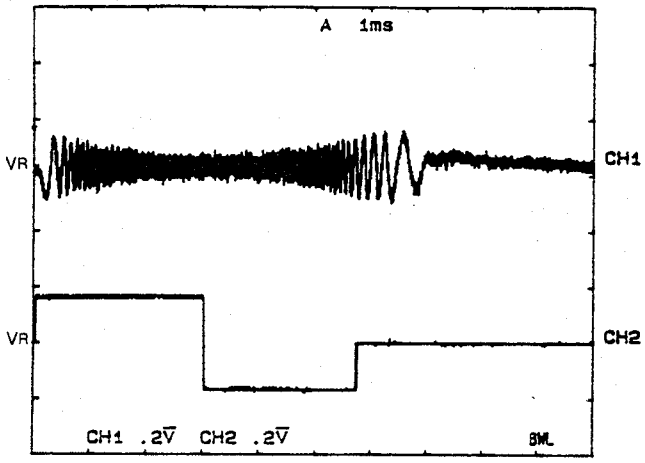
CH1: Feed Out (pin 1 of IC601) 1V/div
CH2: FEM– (pin 58 of IC601) 5V/div
0.1s/div
Mode: Backward Search



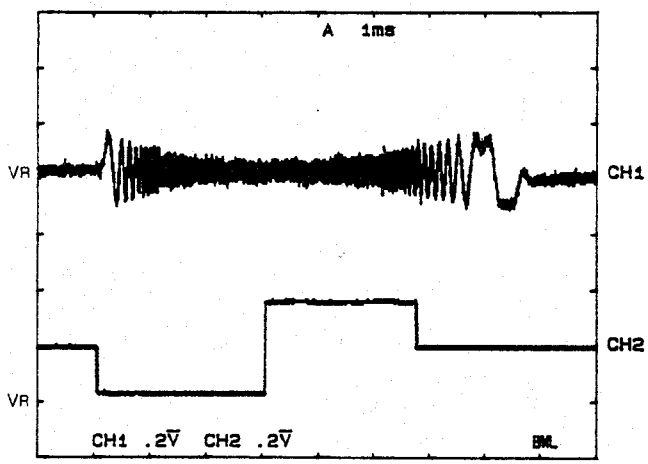
CH1: TO (pin 7 of IC605) 1V/div
CH2: JPO (pin 10 of IC602) 2V/div
1ms/div
Mode: Forward Search



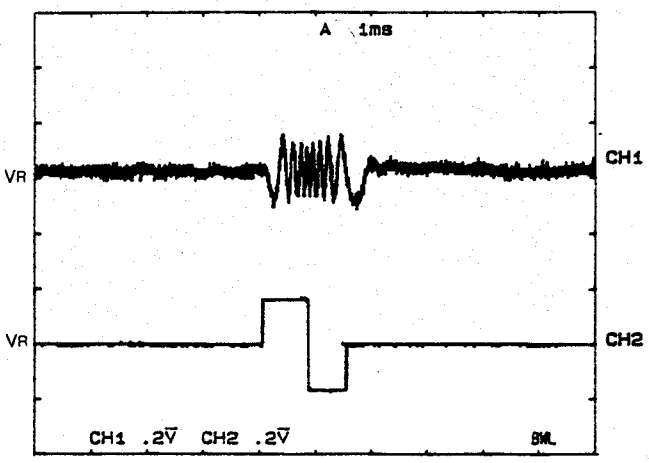
CH1: TO (pin 7 of IC605) 2V/div
CH2: JPO (pin 10 of IC602) 2V/div
1ms/div
Mode: Forward Search (100 track jump)



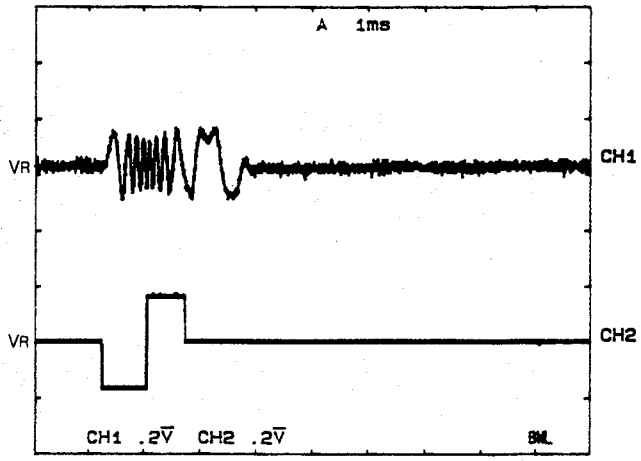
CH1: TO (pin 7 of IC605) 2V/div
CH2: JPO (pin 10 of IC602) 2V/div
1ms/div
Mode: Backward Search (100 Track jump)



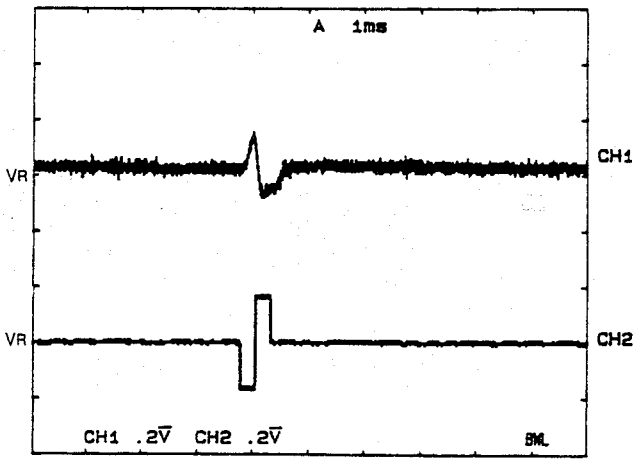
CH1: TO (pin 7 of IC605) 2V/div
CH2: JPO (pin 10 of IC602) 2V/div
1ms/div
Mode: Forward Search (10 track jump)



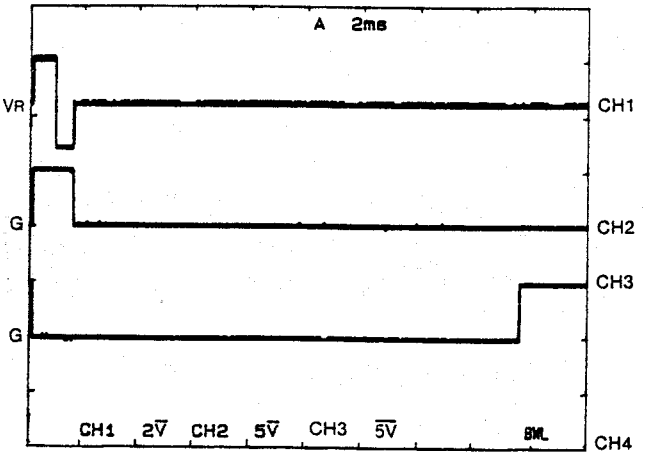
CH1: TO (pin 7 of IC605) 2V/div
CH2: JPO (pin 10 of IC602) 2V/div
1ms/div
Mode: Backward Search (10 Track jump)



CH1: TO (pin 7 of IC605) 2V/div
CH2: JPO (pin 10 of IC602) 2V/div
1ms/div
Mode: Single jump

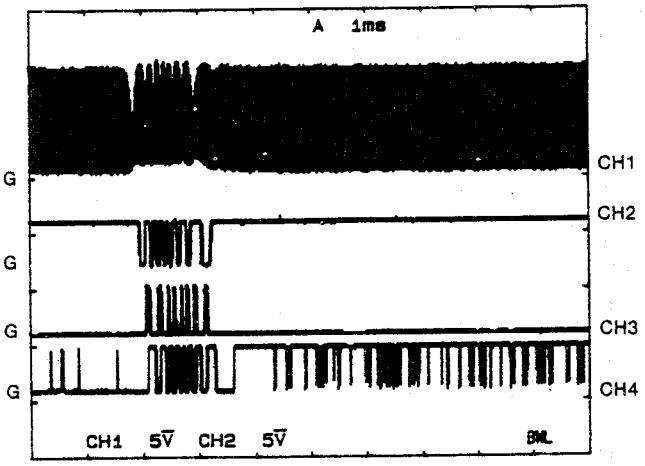


CH1: JPO (pin 10 of IC602) 2V/div
CH2: TRHD (pin 60 of IC601) 5V/div
CH3: TRGL (pin 61 of IC601) 5V/div
2ms/div
Mode: Track Search



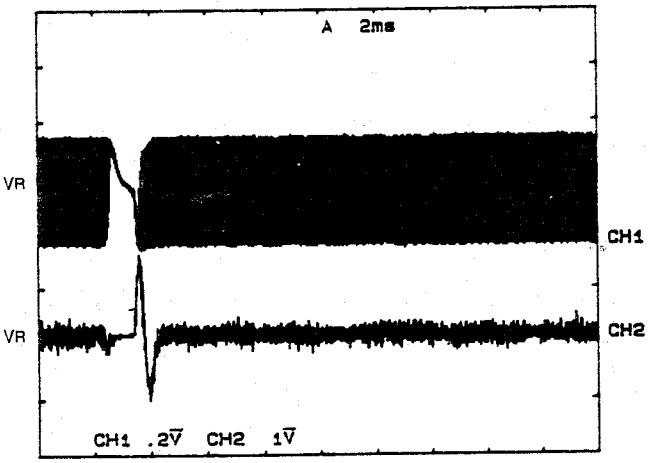
CH1: RF (TP, RF) 2V/div
CH2: $\overline{FZC}$ (pin 67 of IC601) 5V/div
CH3: HF (pin 55 of IC601) 5V/div
CH4: TER (pin 56 of IC601) 5V/div
1ms/div

Mode: Track Search



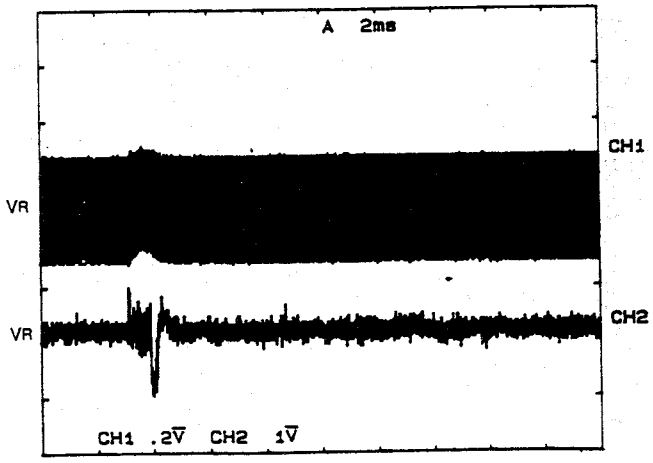
CH1: RF (TP, RF) 2V/div
CH2: TE (TP, TE) 1V/div
2ms/div

Mode: Play (The Black dot part passes 1mm)



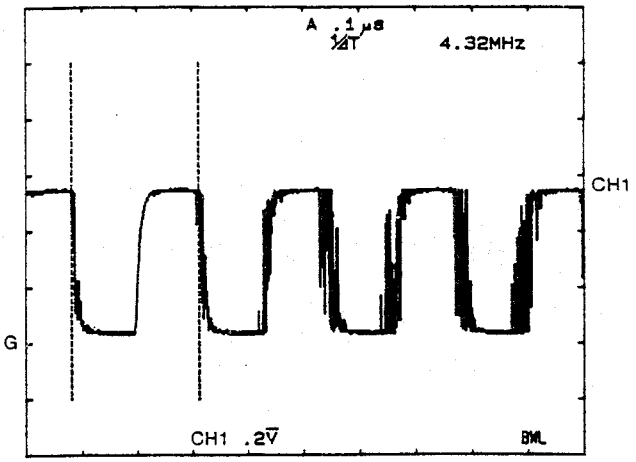
CH1: RF (TP, RF) 2V/div
CH2: TE (TP, TE) 1V/div
2ms/div

Mode: Play (The defect part passes 1mm)



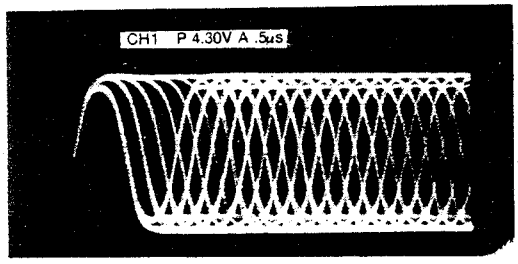
CH1: VCO (pin 9 of IC601) 2V/div

Mode: Play



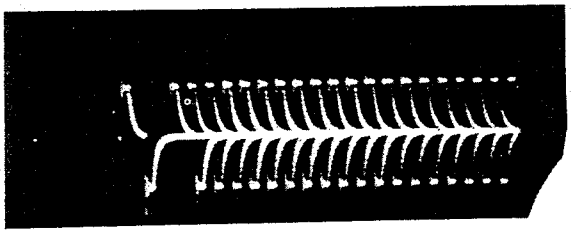
CH1: RF (TP, RF) 1V/div
0.5μs/div

Mode: Play



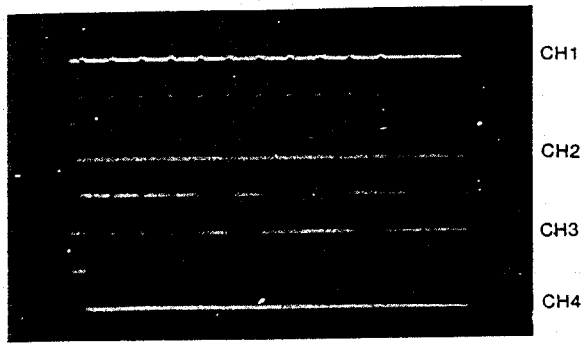
CH1: PCO (pin 78 of IC601) 1V/div
0.5μs/div

Mode: Play

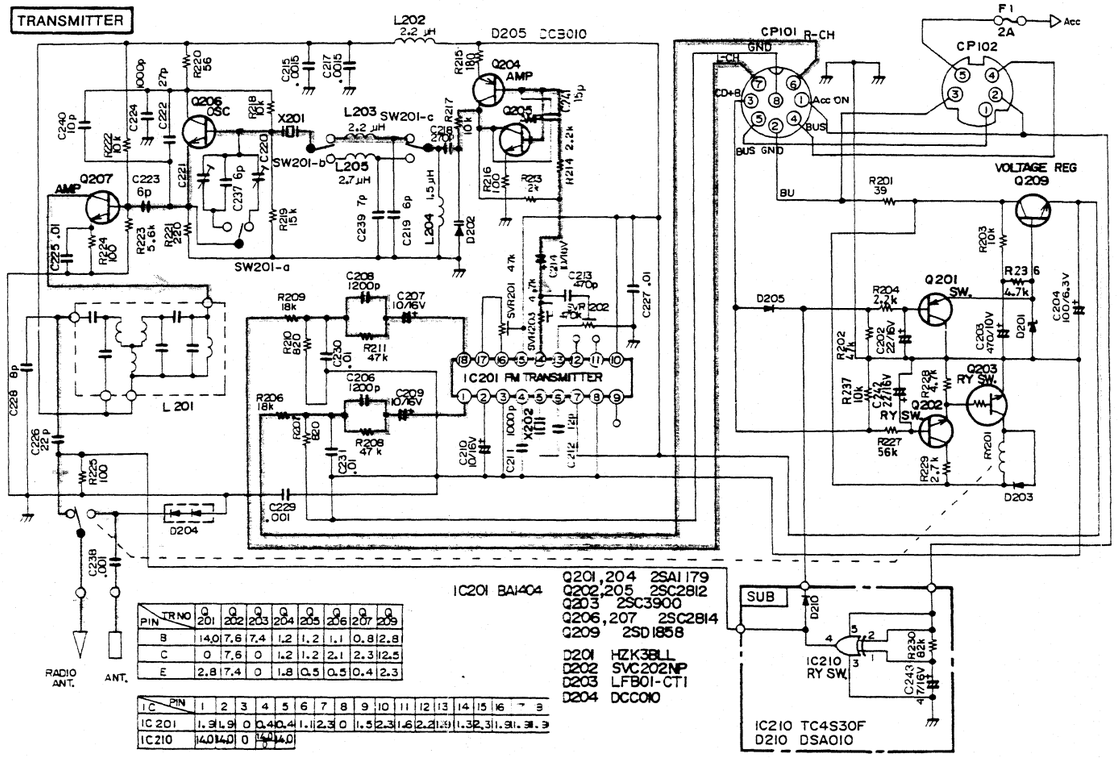


CH1: SCK (pin 46 of IC601) 5V/div
CH2: R/W (pin 47 of IC601) 5V/div
CH3: Dout (pin 49 of IC601) 5V/div
CH4: WQ (pin 50 of IC601) 5V/div

Play: Mode



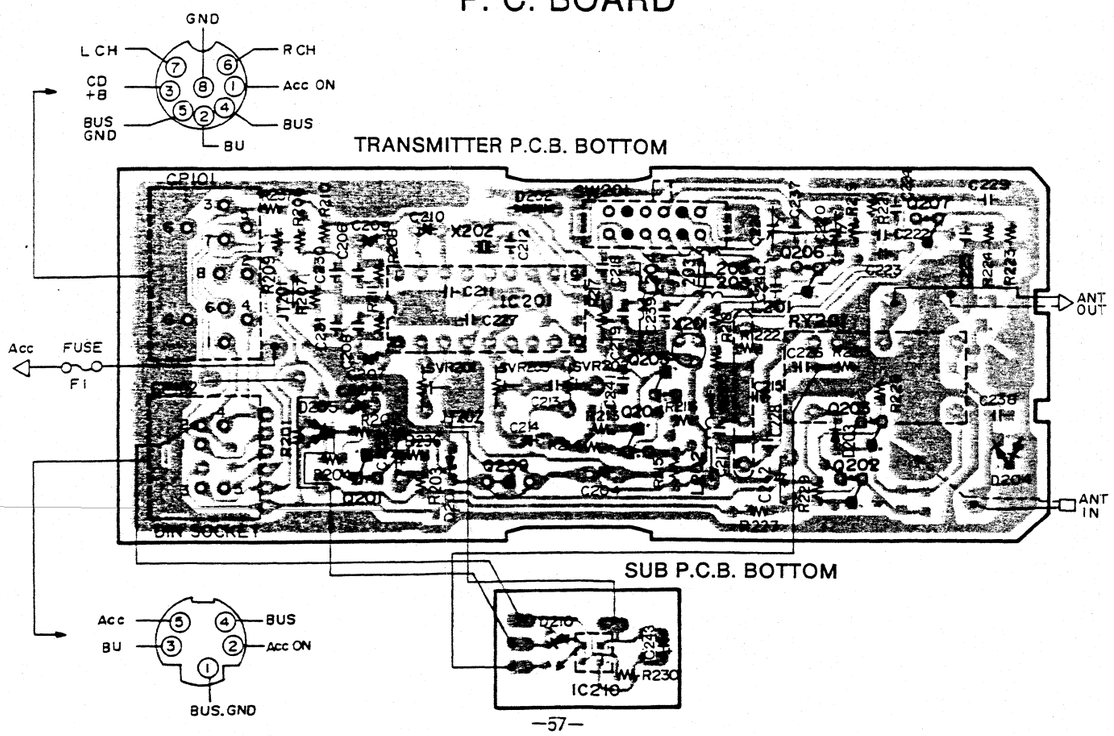
SCHEMATIC DIAGRAM



PIN / TR NO	201	202	203	204	205	206	207	209
B	14.0	7.6	7.4	1.2	1.2	1.1	0.8	2.8
C	0	7.6	0	1.2	1.2	2.1	2.3	12.5
E	2.8	7.4	0	1.8	0.5	0.5	0.4	2.3

IC PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC 201	1.3	1.9	0	0.4	0.4	1.1	2.3	0	1.5	2.3	1.6	2.2	2.9	1.3	2.3	1.3	1.3	3.9
IC 210	14.0	14.0	0	14.0	14.0													

P. C. BOARD

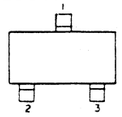


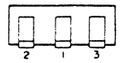
ELECTRICAL PARTS LIST

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
		CONTROLS		
SVR201	632 530 7190	PRESET RESISTOR, 47K	1	
SVR202	632 530 7213	PRESET RESISTOR, 470K	1	
SVR203	632 538 8021	PRESET RESISTOR, 4.7K	1	
X201	632 579 4631	RESONATOR	1	
X202	632 561 5615	RESONATOR,XTAL,38.000KHZ	1	
		COIL & TRANSFORMER		
L201	632 579 4648	FILTER,LC,BP	1	
L202,203	632 265 0541	CHOKE COIL	2	
L204	632 265 0282	CHOKE COIL, 1.5UH	1	
L205	632 265 0596	CHOKE COIL, 2.7UH	1	
		SEMICONDUCTORS		
D201	407 124 3700	ZENER DIODE HZK3BLL	1	
D202	407 138 6001	VARACTOR DI SVC202NP	1	
D203	407 008 4809	DIODE LFB01	1	
D204	407 004 1000	DIODE DCC010	1	
D205	407 004 0607	DIODE DCB010	1	
D210	407 069 4800	DIODE DSA010 } or	1	
	407 064 8902	DIODE DSC010 } or		
IC201	409 002 2003	IC BA1404	1	
IC210	409 155 7603	IC TC4S30F	1	
Q201	405 002 6706	TR 2SA1179-M6	1	
Q202	405 015 8704	TR 2SC2812-L6 } or	1	
	405 111 2408	TR 2SD601A-R } or		
Q203	405 045 2208	TR 2SC3900	1	
Q204	405 002 6706	TR 2SA1179-M6	1	
Q205	405 015 8704	TR 2SC2812-L6 } or	1	
	405 111 2408	TR 2SD601A-R } or		
Q206,207	405 015 9909	TR 2SC2814-F5	1	
Q209	405 029 4501	TR 2SD1858-TV2-R	1	
		RESISTORS		
R201	401 018 9809	CARBON 39 JA 1/4W	1	
R202	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R203	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R204	401 038 0701	MT-GLAZE 2.2K JA 1/10W	1	
R206	401 037 9309	MT-GLAZE 18K JA 1/10W	1	
R207	401 039 0304	MT-GLAZE 820 JA 1/10W	1	
R208	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R209	401 037 9309	MT-GLAZE 18K JA 1/10W	1	
R210	401 039 0304	MT-GLAZE 820 JA 1/10W	1	
R211	401 038 6505	MT-GLAZE 47K JA 1/10W	1	
R213	401 037 6803	MT-GLAZE 12K JA 1/10W	1	
R214	401 038 0701	MT-GLAZE 2.2K JA 1/10W	1	
R215	401 035 9202	MT-GLAZE 180 JA 1/8W	1	
R216	401 037 5202	MT-GLAZE 100 JA 1/10W	1	
R217	401 024 7400	CARBON 10K JA 1/6W	1	
R218	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
R219	401 037 8005	MT-GLAZE 15K JA 1/10W	1	
R220	401 038 7502	MT-GLAZE 56 JA 1/10W	1	
R221	401 038 0602	MT-GLAZE 220 JA 1/10W	1	
R222	401 037 5608	MT-GLAZE 10K JA 1/10W	1	

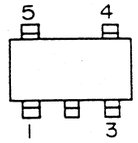
SEMICONDUCTOR CONFIGURATIONS

2SA1179-M6
2SC2812-L6



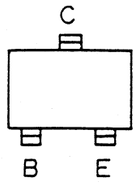


TC4S30F

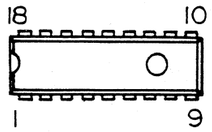


2SD1858

2SC3900
2SC2814

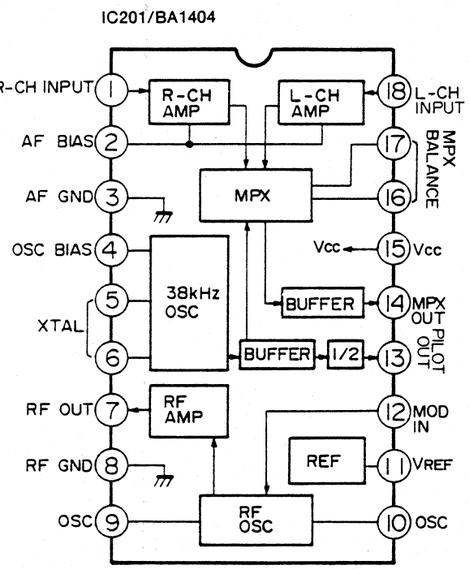


BA1404

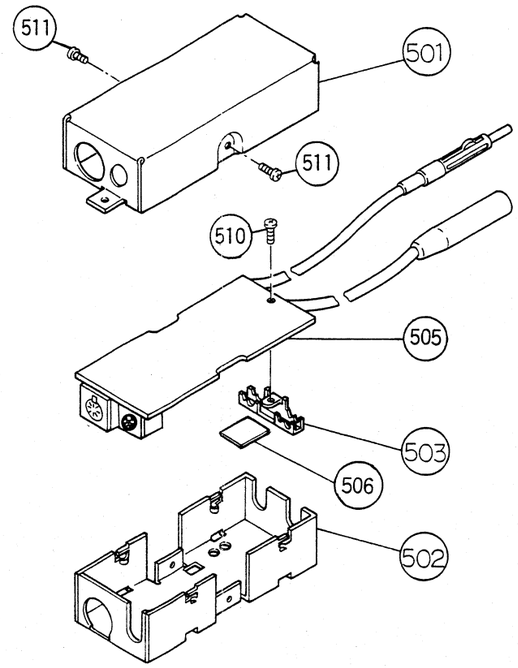


IC EQUIVALENT CIRCUITS

IC201/BA1404



CABINET EXPLODED VIEW



CABINET PARTS LIST

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
		INDIVIDUAL		
	632 631 6610	INNER CARTON	1	
	632 542 5825	POLYETHYLENE BAG	1	
	632 635 2458	LABEL,BARCODE		
		ACCESSORY		
	632 631 6627	INSTRUCTION MANUAL	1	
	411 070 3905	SCR TPG BIN 3X12	2	
	632 298 1683	POLYETHYLENE BAG	1	
	632 617 3947	LABEL,CODE, FM MODULATOR,ACC	1	
	632 569 4245	CARD,WARRANTY	1	
		CABINET		
501	632 620 4030	CASE, TOP	1	
502	632 586 0237	CASE,BOTTOM	1	
503	632 598 4612	BRACKET-E,CORD	1	
505	632 617 2841	ASSY,PCB,TRANSMITTER	1	
506	632 629 3195	ASSY,PCB,SUB	1	
510	411 028 4206	SCR S-TPG PAN 2.3X5 BRACKET	1	
511	411 028 5906	SCR S-TPG PAN 2.6X5,CASE	2	
	632 631 6962	LABEL,RATING	1	
	632 598 4636	LABEL	1	

Ref.No	MFR's Part Number	Description	Q'ty	Remarks
R223	401 038 7700	MT-GLAZE 5.6K JA 1/10W	1	
R224,225	401 037 5202	MT-GLAZE 100 JA 1/10W	2	
R227	401 038 7809	MT-GLAZE 56K JA 1/10W	1	
R228	401 038 6406	MT-GLAZE 4.7K JA 1/10W	1	
R229	401 038 2101	MT-GLAZE 2.7K JA 1/10W	1	
R230	401 039 0502	MT-GLAZE 82K JA 1/10W	1	
R236	401 038 6406	MT-GLAZE 4.7K JA 1/10W	1	
R237	401 037 5608	MT-GLAZE 10K JA 1/10W	1	
JT201, 202,203	401 035 4108	MT-GLAZE 0.000 ZA 1/8W	3	
	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	1	
		CAPACITORS		
C202	403 042 7707	ELECT 22U M 16V	1	
C203	403 041 4509	ELECT 470U M 10V	1	
C204	403 156 0908	ELECT 100U M 6.3V	1	
C206	403 070 5508	CERAMIC 1200P K 50V	1	
C207	403 041 8804	ELECT 10U M 16V	1	
C208	403 070 5508	CERAMIC 1200P K 50V	1	
C209	403 041 8804	ELECT 10U M 16V	1	
C210	403 041 8804	ELECT 10U M 16V	1	
C211	403 069 1702	CERAMIC 1000P K 50V	1	
C212	403 010 8507	CERAMIC 12P J 50V	1	
C213	403 026 8508	CERAMIC 470P K 50V	1	
C214	403 041 8804	ELECT 10U M 16V	1	
C215	403 070 8806	CERAMIC 1500P K 50V	1	
C217	403 070 8806	CERAMIC 1500P K 50V	1	
C218	403 020 5602	CERAMIC 270P J 50V	1	
C219	403 029 7409	CERAMIC 6P D 50V	1	
C220,221	632 246 2342	TRIMMER, 60PF	2	
C222	403 020 0607	CERAMIC 27P J 50V	1	
C223	403 029 7408	CERAMIC 6P D 50V	1	
C224	403 069 1702	CERAMIC 1000P K 50V	1	
C226	403 018 0503	CERAMIC 22P J 50V	1	
C228	403 032 8608	CERAMIC 8P D 50V	1	
C225	403 069 5601	CERAMIC 0.01U K 50V	1	
C227	403 069 5601	CERAMIC 0.01U K 50V	1	
C229	403 069 1702	CERAMIC 1000P K 50V	1	
C230,231	403 069 5601	CERAMIC 0.01U K 50V	2	
C238	403 069 1702	CERAMIC 1000P K 50V	1	
C239	403 031 9200	CERAMIC 7P D 50V	1	
C237	403 029 7409	CERAMIC 6P D 50V	1	
C240	403 008 8007	CERAMIC 10P D 50V	1	
C241	403 012 6808	CERAMIC 15P J 50V	1	
C242	403 042 7707	ELECT 22U M 16V	1	
C243	403 043 9700	ELECT 47U M 16V	1	
		MISCELLANEOUS		
CP101	632 587 5729	SOCKET,DIN	1	
CP102	632 617 4265	SOCKET,DIN	1	
RY201	632 561 4441	RELAY	1	
F1	423 005 8305	FUSE 125V 2A	1	
SW201	632 597 3470	SWITCH,SLIDE,4P-2T	1	
	632 564 2710	CORD,700MM	1	
	632 561 4458	CORD,700MM	1	
	632 598 3738	CORD,ACC	1	

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